EAST COAST CHEMICAL DISPOSAL, INC.

LESSON NO. V

LABELING OF HAZARDOUS WASTE

Lesson V

Classroom instructions time 1-1/2 hours
Question and answer session 15 minutes
Testing time 15 minutes

TOPICS AND AREA DISCUSSED:

C. CFR 40 - Pretransportation requirements EPA & DOT Regulation
262.30 CFR 40 - Packaging - CFR 49, Section 173.178, 179
262.31 CFR 40 - Labeling - CFR 49, Section 172.334
262.32 CFR 40 - Marking - CFR 49, Section 172.101
262.33 CFR 40 - Placarding - CFR 49, Section 172.504
262.34 CFR 40 - Accumulation Time
265.173 CFR 40 - Leaking Packing - CFR 49, Section 177.854
265.177 CFR 40 - Compatability in storage
261.6 CFR 40 - Hazardous Waste Label

Class was instructed in all the above sections noting that EPA rules are in addition to, and not separate from, DOT's rules and regulations and that whenever a city, county, or state regulation comes in conflict with federal regulations then most stringent rule shall apply.

TEST: LESSON NO. I

Instructor_____Date_____

Employee's name_____Grade_____

Job classification_____

1. Name 3 types of fires.
2. What is their classifications using A.B.C.?
3. Name 3 kinds of fire fighting equipment?
4. Name 3 kinds of agents used to fight fires?
5. What kind of fire is each used for?
6. What are the first 3 things you should do if you sight a fire?
7. Name the locations of emergency power shut-off switches.
8. How many are there?
9. Explain the difference between a controllable fire and an uncontrollable fire.
10. What is the procedure for giving an alarm?
11. Where are emergency phone numbers listed?
12. On the 3 plot plans showing location of buildings, grounds, etc., fill in the location of each of the following using the signs given:

Plot Plan #1	EP	Emergency electric power shut-off
	PB	Phones for emergency alarm system
	MD	Mobil (dry powder) fire extinguisher
	PD	Portable hand held extinguishers
Plot Plan #2	FH	Fire hose (box)
	WH	Water hydrant
	FA	First aid station
	ES	Emergency showers and eye wash
Plot Plan #3	OM	Oxygen mask
	FB	Fire blankets
	ST	Stretchers
	EX	Exits

TEST: LESSON NO. V

Instructor_____Date_____

Employee's name_____Grade_____

Job classification_____

1. What kind of DOT container is needed for shipping 55 gallons of waste methyl ethyl ketone?

2. What kind of a DOT container would you use if shipping 55 gallons of waste acetone?

3. Would you place a hazardous waste label on top or the side of the drum?

4. Would an empty 55 gallon drum which previously contained hazardous waste need to be manifested?

5. What is EPA's definition of an empty container?

6. Do you need to put the accumulation date on a hazardous label?

7. What is the definition of an incompatible substance?

8. Where in CFR 49 would you look to find the proper shipping name?

9. How long must a generator keep a drum of hazardous waste before shipping? Why?

10. Should the generator and transporter section in a manifest be filled out correctly before transporting?

11. Write a proper shipping name for a mixture of hazardous waste e.g. 20% acetone, 40% mineral spirits, 40% kerosene.

12. Write a proper shipping name for a mixture of hazardous waste e.g. 30% 1,1,1, trichloroethane, 30% perchlorethylene, 40% methylene chloride.

13. Write the name of at least two (2) halogenated solvents.

14. Name two (2) non-halogenated solvents.

15. What is the definition of solid waste?

16. Describe what would constitute a packaging of hazardous waste that was ready to be transported or shipped and what would be required. (list them)

EAST COAST CHEMICAL DISPOSAL, INC.

LESSON NO. VI

HANDLING AND INSPECTION OF HAZARDOUS WASTE

REQUIREMENTS, COMPLIANCE, PRECAUTIONS, ETC.

Lesson VI

Classroom instruction time 1-1/2 hours
Question and answer session 15 minutes
Testing time 15 minutes

TOPICS DISCUSSED

Storage of hazardous waste and use and management of Subpart I CFR 20-265.170, CFR 265.171, 265.172, 265.173, 265.174, 265.176, 265.177, 265.190

Instructions were given in detail regarding the EPA's management Section.

Class was instructed to make sure before receiving any hazardous waste that the transporter has obeyed all rules and regulations and that the containers, if brought in drums, were properly labeled with accumulation dates and labeled in accordance with DOT regulations, with correct EPA waste (hazardous) label on drum and that containers were in proper condition using the following steps:

1. Make sure manifest is in order.

2. Make sure labels on drums match the information on the manifest.

3. If there is any discrepancy in count, so note on manifest before giving transporter his copy.

4. After unloading check all drums to see if they are in good condition or leaking. If needed, transfer the ones that don't comply.

5. Before opening drums loosen bungs slowly to allow any pressure (air) to escape.

6. Wear proper safety equipment e.g. approved chemical gloves, long sleeves, goggles or safety glasses, steel toed shoes, hard hat.

7. After removing bungs, use pH test tape to ascertain if any drum of material is either acid or caustic (pH below 4 or above 10) in nature before attempting to sample.

TEST: LESSON NO. VI

Instructor_____Date_____

Employee's name_____Grade_____

Job classification_____

1. What label is required by EPA on a drum of waste?
2. Where should the label be placed? Why?
3. What is a pH?
4. What is the EPA test for corrosive waste on pH?
5. How often should storage area be checked for leakers?
6. How full should a 55 gallon drum be filled to be safe for transportation?
7. What safety precautions should be taken before opening a drum?
8. If we notice that a drum of waste is leaking should we transfer it immediately or wait until we have time?
9. Is it all right to tighten a bung on a drum without a gasket? Are gaskets required?
10. Is it all right to legally accept drums other than DOT 17 E 18/20 steel closed-head drums?
11. If so, what kind?
12. In accepting a shipment, when should you report a discrepancy?
13. Is the EPA number and the manifest number supposed to be on the hazardous waste label?
14. What about the accumulation data?
15. What is the wording of the warning on the hazardous waste label?
16. Why is routine inspection so vital?
17. Describe a representative sample.

EAST COAST CHEMICAL DISPOSAL, INC.

LESSON NO. VII

TRANSPORTATION OF HAZARDOUS WASTE

DRIVER'S DUTIES AND RESPONSIBILITIES

Lesson VII

Classroom instruction time 1-1/2 hours
Question and answer session 15 minutes
Testing time 15 minutes

TOPICS DISCUSSED

C.F.R. Title 49, Section 172-178, Parts CFR 40 Federal Motor Carrier Safety Regulations Parts 390-397

I. D.O.T. Regulations
   A. Qualifications for driving, Part 391 FMC.
   B. Maximum driving time and on duty time, FMC, Part 395.
   C. Driver's daily log, FMC, Part 395.8.
   D. Placarding of vehicles, CFR 40-262.34.
   E. Shipping papers (empty drum pick-up), CFR 49-172.18.
   F. Out of service drivers, FMC 395.13.

II. Safety Practices
   A. Responsibilities
   B. Alcoholic beverage, drugs, FMC 391.41.
   C. Driving while ill or fatigued, FMC 392.3.

III. Fire Prevention
   A. Fueling precautions, FMC 392.50.
   B. Extinguisher capacity.

IV. Safe Driving
   A. Loading
   B. Product drum-off.
   C. Customer relations.
   D. What to do in case of accident, CFR 394.9.

V. Vehicle Inspection
   A. Maintenance.
   B. Inspections.
   C. Repairs.

VI. Transporting and Driver Instruction

A. Hazardous waste labels for drums to be carried by drivers for customers.

B. Driver to call in in the event manifest not filled out or if there is a discrepancy.

C. Empty containers will be picked up under CFR Title 49, Section 173.28 - 173.29 and will not be carried on hazardous waste manifest; it will still be carried on bill of lading book or packing slip at empty drums returned last contained flammable liquid; combustible liquid; or solvent n.o.s. ORM-E.

D. We will only pick-up waste in steel D.O.T. approved drums.

E. Our standard bill of lading will still accompany bulk manifest with our manifest number on it for our in-plant bookkeeping (no copy to customer).

F. Bulk tanker drivers should always carry safety glasses, chemical gloves, long sleeve shirts, steel-toed shoes, and a hard hat. These items must be worn whenever loading or unloading, connecting or disconnecting hoses with solvent at customer's plants as well as at ECCD. Bulk tanker drivers must also always use ground wires.

G. Every driver should be able to answer any question directed to him that is pertinent to the transportation and safe handling of hazardous waste and hazardous substances.

H. All drivers will carry all applicable DOT labels and supply them to customers when needed.

When you are preparing to transport a hazardous waste you should find the manifest properly prepared and signed. You should check to see if this is correct. You should also check each drum to determine if it is properly labeled, the bung tight and the drum in proper condition for shipment. If you find any errors you should attempt to correct them if possible. For instance, if labels are missing you can supply them so the customer's employee can affix them properly. If labels are left on drums which should not be there such as red labels on chlorinated solvent drums, they can be crossed out so it is obvious they no longer apply. If the waste labels are not filled out, ask that they be completed. Check for leaks.

All the drums must comply with DOT regulations. If you determine that there are some drums which are not in keeping with the manifest, you should change the number of drums on the manifest. For instance, if the manifest calls for 15 drums of Perchlorethylene but 2 drums are something else other than what is written on the hazardous waste labels, then you should change the manifest to 13. If the manifest is already signed you must obtain approval from whomever signed it before making the change. If that person is not available, you must obtain permission from another authorized person. If a change is made it should be done as follows: ~~15~~ 13 (J.D.). You cannot erase on the manifest. It must be initialed by the person who signed it or another authorized person.

TEST: LESSON NO. VII

Instructor_____Date_____

Employee's name_____Grade_____

Job classification_____

1. What is meant by limited quantity?

2. Where can a vehicle placarded "flammable" park legally?

3. Can you fill your log out at the end of the day or do you need to after each delivery?

4. How often should you check your tires?

5. What emergency response equipment do you carry on your truck, tanker, etc.?

6. Where are shipping papers kept while in transit?

7. Is the transporter responsible for a hazardous waste release if the hazardous waste he is transporting reacts and explodes while in transit?

8. How large of a fine can you receive for violation on an EPA or DOT regulation covering transporters?

9. What are two (2) ways to determine proper placarding?

10. Are drivers required to carry extra DOT labels when hauling hazardous materials in drums?

11. Which do you ground to first when unloading a flammable product? (a) to tank (b) to truck?

12. What are the rules in regards to driving time? Can you drive for 12 hours at a time?

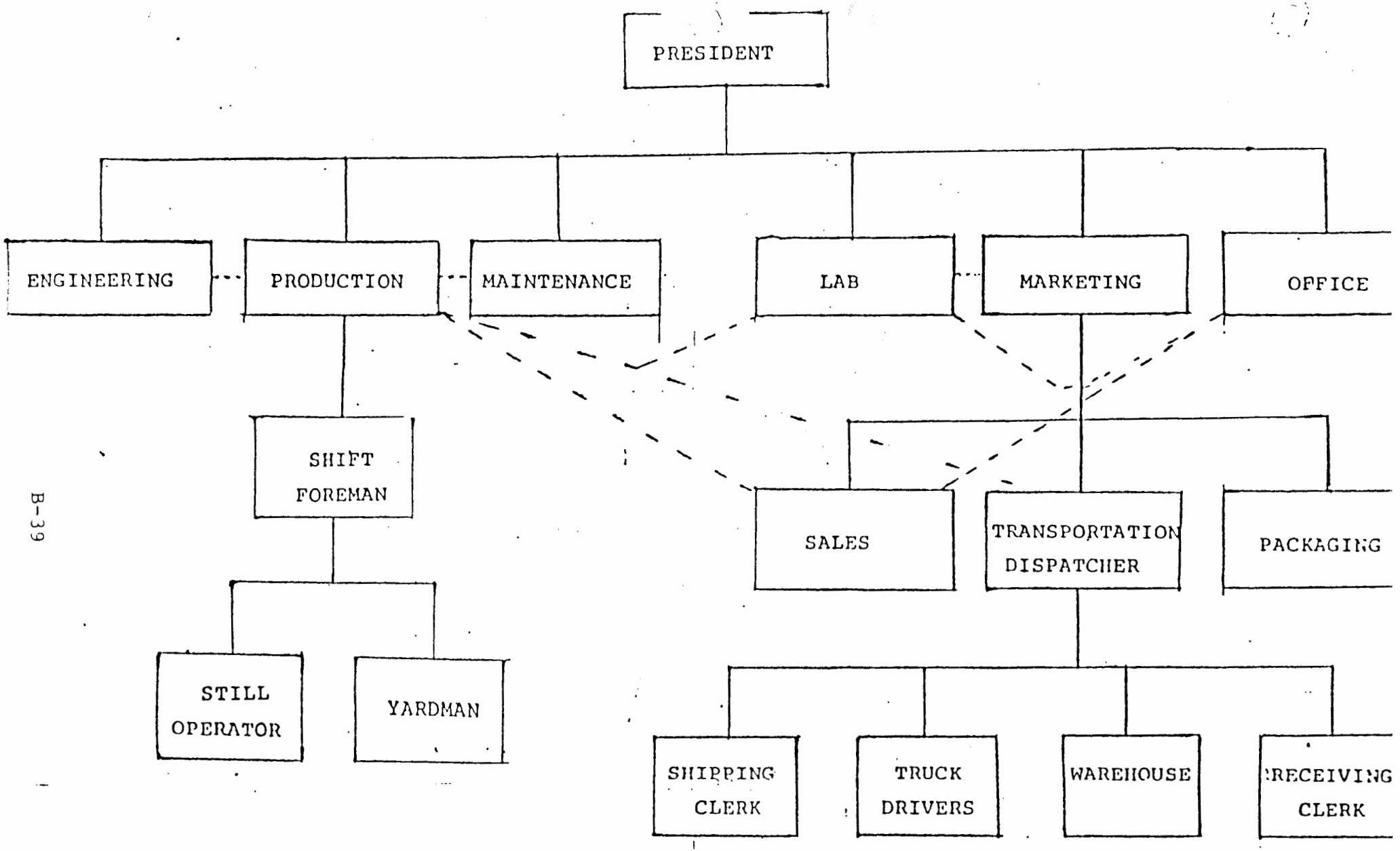
13. If you are carrying a corrosive from one company and a flammable from another company in a bulk tanker, how would you placard it? (1,000 gallons of each)

14. How often do you need to take a physical?

15. If you discover a leaking drum while in transit what action do you take? Please describe the four (4) steps.

16. If you are in the process of accepting a load of hazardous waste for transportation and find the manifest has some discrepancies what should you do?

17. Where would you look to find the proper shipping name of a hazardous material?


PRESIDENT
ENGINEERING
PRODUCTION
MAINTENANCE
LAB
MARKETING
OFFICE
SHIFT FOREMAN
SALES
TRANSPORTATION DISPATCHER
PACKAGING
STILL OPERATOR
YARDMAN
SHIPPING CLERK
TRUCK DRIVERS
WAREHOUSE
RECEIVING CLERK
= Directly responsible to.
= Co-working with other department heads.

I. Job Descriptions

Qualifications may be waived at the option of Management if in their judgement there exists equivalents to the stated requirements.

PRESIDENT

I. Qualifications:
   1. Education: *4 year degree from accredited college or university.
   2. Experience: *10 year minimum.

II. Requirements:
   1. Must complete company training program.
   2. Knowledge of Waste Analysis Plan.
   3. Knowledge of Waste Management Procedure.
   4. Knowledge of products including safety data sheets.
   5. Knowledge of company's policy and procedures.
   6. Knowledge of accounting procedures.
   7. Familiarization with EPA, DOT and other regulations.
   8. Knowledge of Emergency Contingency Plans.
   9. Attend outside training workshop and seminars to keep employees and customers informed.
   10. Possession of a valid Pennsylvania Drivers License with a good driving record.

III. Duties:
Coordinates and is responsible for the implementation of:

   1. Safety Program for work force and customers.
   2. Emergency Response Plans.
   3. All company policy.
   4. Approval of all company rules and regulations.
   5. Training program for all employees.
   6. Oversees general operations of the company.
   7. Oversees all capitol expenditures.
   8. Marketing policies.
   9. Financing policies.
   10. Budget considerations.
   11. Employee relations.
   12. Oversees:
      a. Production.
      b. Laboratory.
      c. Maintenance.
      d. Warehousing.
      e. Transportation.
      f. Packaging.
      g. Sales.
      h. Engineering.
   13. Community participation and involvement.
   14. Compliance with all governmental regulations.

CHIEF CHEMICAL ENGINEER

I. Qualifications:
   1. Education: Minimum 4 year college or university degree in Chemical Engineering.
   2. Experience: Minimum of 4 years experience in engineering, design and/or production in a chemical plant.

II. Requirements:
   1. Must complete company training program in the following areas.
      A. Emergency Contingency Plans
      B. Knowledge of Waste Analysis Plan
      C. Knowledge of Waste Management Procedure
      D. Must be familiar with Material Safety Data sheets for all products.

III. Duties:
   1. Design facilities for production, transportation, warehousing and storage.
   2. Set-up maintenance program for all equipment.
   3. Will be the Chief Emergency Coordinator.
   4. Will be a member of the Safety Committee.
   5. Shall be responsible for establishing and training of the Emergency Response Team.
   6. Shall be a member of the Environmental Coordinating Team.
   7. Responsible for arranging for the installation of all facilities, including the utilities; also responsible for obtaining permits to operate and construction permits.
   8. Train personnel in operation and safe use of all new production and storage equipment.
   9. Undertake cost savings projects in the areas of energy and production efficiency.
   10. Research alternatives for waste management.
   11. Resource for equipment design and installation at other ECCD facilities.

PRODUCTION MANAGER

I. Qualifications:
   1. Education: *4 years college or equivalent.
   2. Experience: *5 years or equivalent.

II. Requirements:
   1. Complete company training program.
   2. Knowledge of equipment, including:
      A. Boilers.
      B. Stills.
      C. Film Evaporators.
      D. Cooling Towers.
      E. Pumps and Motors.
   3. Knowledge of Emergency Contingency Plan.
   4. Knowledge of all products including Material Safety Data sheets.
   5. Knowledge of all regulations pertaining to the operation of equipment in the plant.
   6. Knowledge of spill plans.

III. Duties:
   1. Responsible for production of all material through refinery.
   2. Responsible for training and informing all workers in his department about safe and proper usage of equipment.
   3. Responsible for maintaining a clean plant.
   4. Assist maintenance in periodic inspection of all equipment, including tanks, pumps, and motors.
   5. Member of Emergency Response Team.
   6. Member of ECCD fire fighting team.
   7. Perform daily inspections of his department to assure no leaks, spills or other unsafe condition exists.
   8. Coordinate with engineering for new equipment and efficient operation of old equipment.

CHIEF CHEMIST

I. Qualifications:
   1. Education: *Minimum of 4 year degree in chemistry from accredited college or university.
   2. Experience: *2 years minimum in one or a combination of the following areas:
      A. Laboratory procedures.
      B. Solvent experience in laboratory or related areas.
      C. Qualitative analysis.
      D. Quantitative analysis.

II. Requirements:
   1. Must complete company training program in the following areas:
      A. Fire.
      B. Explosion.
      C. Spills.
      D. Other emergency response procedures for laboratory.
   2. Knowledge of the Waste Analysis Plan.
   3. Knowledge of products including:
      A. The ability to suggest the proper use of various solvents.
      B. Material Safety Data.
      C. Manifesting.
      D. Knowledge of Waste Management Procedures.

III. Duties:
   1. Analyze samples of spent solvents for production and marketing information.
   2. Furnish technical information for ECCD products.
   3. Will be a member of the Emergency Response Team.
   4. Assist marketing department in developing new products.
   5. Assist production in testing and other activities.
   6. Will be a member of the Safety Committee.
   7. Will be a member of the Environmental Coordinating Team.
   8. Quality control supervisor.
   9. Supervise maintenance of laboratory equipment.
   10. Will be responsible for laboratory safety and cleanliness.
   11. Will develop laboratory standards for testing of all materials.
   12. Will be responsible for Material Safety Data Sheets for all products produced, resold and used by ECCD.

OFFICE MANAGER

I. Qualifications:

1. Education: *Minimum, degree from accredited secretarial school, business school, university, or equivalent.

2. Experience: *2 years experience in one of the following areas:
   A. Secretarial.
   B. Accounting.
   C. Business Administration.
   D. General Office.

3. Must be capable of supervising others who will work in the office.

II. Requirements:

1. Must complete company training program in the following areas:
   A. Emergency Contingency Plans.
   B. Employee Benefits.
   C. Company Procedures and Policies.
   D. Office Procedures.
   E. Accounting.

2. Be familiar with Waste Management Program.
   A. Appropriately filling out manifest.
   B. Handling and filing of manifest.

III. Duties:

1. Management of clerical work.
2. Responsible for the following:
   A. Billing and Invoicing.
   B. Company Correspondence.
   C. Accounts Receivable.
   D. Accounts Payable.
   E. EPA manifest and shipping records.
   F. Cleanliness and efficiency of the office.
   G. Will be a member of the Emergency Response Team.
   H. Will be a member of the ECCD Fire Fighting and Prevention Team.
   I. Responsible for all office equipment purchases and maintenance.
   J. Responsible for the hiring and firing of office help.
   K. Responsible for coordinating and developing office procedures.
   L. Training of office personnel in emergency response procedures.
   M. Responsible for collecting and paying sales and other taxes.

SHIFT FOREMAN

I. Qualifications:
   1. Education: *2 years college or equivalent.
   2. Experience: *2 years on still or 1 year or more as yardman or equivalent.

II. Requirements:
   1. Completion of company training program.
   2. Knowledge of equipment including:
      A. Stills.
      B. Cooling tower.
      C. Boilers.
      D. Film evaporators.
      E. Pumps and motors.
   3. Knowledge of Emergency Contingency Plan.
   4. Knowledge of all products including material safety data sheets.
   5. Knowledge of Chemical Emergency Procedures.
   6. Knowledge of operation of pumps and equipment needed to perform job as related to shipping and receiving areas.

III. Duties:
   1. Responsible for following schedule of materials to be run from production manager.
   2. Responsible for cleanliness and safety during his shift.
   3. Perform daily inspection for leaks, spills or other unsafe conditions.
   4. Assist maintenance in inspection and repairing equipment.
   5. Responsible for people on his shift being informed and trained in safe operating practices.

SALESMAN

I. Qualifications:
   1. Education: *4 years college with a degree in Chemistry or Chemical Engineering or equivalent.

   2. Experience: *2 years or equivalent.

II. Requirements:
   1. Completion of company training program.
   2. Knowledge of all products including application, usage and safety.
   3. Knowledge of Emergency Contingency Plan.
   4. Knowledge of Waste Management Plan.
   5. Knowledge of EPA and DOT regulations including manifest, packing slips, placarding, containers, etc.
   6. Familiarization with:
      A. Laboratory Procedures.
      B. Production Procedures.
      C. Transportation Procedures.

   7. Possession of a valid Pennsylvania Driver's License with a good driving record.

III. Duties:
   1. Promote the sale of ECCD products.
   2. Solicit customers for recycling and seek new sources of waste materials to be recycled.
   3. Provide customers with technical information on ECCD products and programs, including:
      A. Material Safety Data Sheets.
      B. EPA and DOT regulations.
      C. Advise customers of manifest management.

   4. Provide market information to marketing department.
   5. Provide information to production and laboratory.
   6. Assist transportation department with sales information.
   7. Assist credit department with information to keep current the evaluation of a customer's credit status.

DISPATCHER AND TRANSPORTATION MANAGER

I. Qualifications:
   1. Education: *2 years college or equivalent.

   2. Experience: *4 years.

II. Requirements:
   1. Complete company training program.
   2. Knowledge of all EPA and DOT regulations.
   3. Knowledge of Waste Analysis Plan.
   4. Knowledge of products, including:
      A. Safety.
      B. Manifest completion.
      C. Packing slips.
      D. Spill and emergency plans on highway and in the plant.

   5. Knowledge of customers locations and hours of business.

III. Duties:
   1. Assure that customers receive product when promised.
   2. Responsible for training drivers in emergency procedures.
   3. Responsible for training drivers in EPA and DOT regulations.
   4. Scheduling trucks, shipping and receiving activities.
   5. Coordinate inventory and orders.
   6. Assist in scheduling and suppliers.
   7. Responsible for seeing manifest and invoice packing slips comply with EPA and DOT regulations.
   8. Coordinates with maintenance for the scheduling of all trucks for regular maintenance and safety inspections.

BULK SHIPPING CLERKS

I. Qualifications:
   1. Education: *Minimum High School graduate or equivalent.
   2. Experience: *1 year in warehouse or equivalent.

II. Requirements:
   1. Completion of company training program.
   2. Knowledge of products including Material Safety Data sheets.
   3. Knowledge of Emergency Contingency Plans.
   4. Knowledge of pump operation.
   5. Knowledge of safety in pumping, transferring and transportation of all products.
   6. Be familiar with DOT and EPA regulations for storage and transportation of all products.
   7. Assist maintenance in upkeep and inspection of all equipment.

III. Duties:
   1. Perform inventory control.
   2. Perform daily inspection for leaks, spills or other unsafe conditions.
   3. Assist laboratory by providing samples for:
      A. Quality control.
      B. Sales samples.
      C. As needed.
   4. Assist and inform maintenance of all equipment problems and periodic inspections including:
      A. Tanks.
      B. Pumps.
      C. Lighting.
      D. Hoses.
   5. Make periodic inspections of fire fighting and other emergency equipment.
   6. Load and unload trucks.
   7. Responsible for any truck leaving the plant from his department meeting all DOT and EPA regulations.
   8. Inspect tanks for pollution control equipment to insure it is operating properly.
   9. Inspect all tankers before loading to insure they are empty and clean.
   10. Responsible for making certain that every truck is properly placarded and that the driver has the proper packing slips.

RECEIVING CLERK

I. Qualifications:
   1. Education: *High School Graduate or equivalent.
   2. Experience: *1 year as yardman or equivalent.

II. Requirements:
   1. Completion of company training program.
   2. Knowledge of all incoming material including material safety data sheets.
   3. Knowledge of Emergency Contingency Plan.
   4. Knowledge of Waste Analysis Plan.
   5. Knowledge in spill prevention.
   6. Knowledge in sampling.
   7. Knowledge of operation of fork lift, including passing a written exam.
   8. Knowledge of all fire fighting equipment in area.
   9. Be familiar with DOT and EPA regulations pertaining to Hazardous Waste.

III. Duties:
   1. Inspect all incoming deliveries.
   2. Assist in inventory control.
   3. Make daily inspection for leakers, spills or other unsafe conditions.
   4. Keep area in clean condition.
   5. Provide samples to lab of all incoming materials.
   6. Load and unload trucks.
   7. Sample all materials.
   8. Responsible for all incoming shipments meeting EPA and DOT regulations before unloading.

TRUCK DRIVER

I. Qualifications:
   1. Education: High School Graduate or equivalent.
   2. Experience: *2 years minimum in the type of equipment to be used.
   3. Possession of a valid Class I Drivers License.

II. Requirements:
   1. Must complete company training program in the following areas:
      A. Emergency Contingency Plans.
      B. Knowledge of Waste Management Procedure.
      C. Familiarization of hazardous waste.
      D. Familiarization of safety and transportation of all types of products shipped by the company.
      E. DOT and EPA rules and regulations.
      F. Spill prevention and procedures while transporting materials.
      G. Maintenance of equipment.
      H. Safety inspection of trucks.
   2. Complete a physical from a company doctor.
   3. Pass check-out by company insurance company includinc tickets and accidents.
   4. Pass driving test.

III. Duties:
   1. Responsible for correctly picking up waste solvents from customers.
      A. Manifest must be completely and correctly filled out by the customer.
      B. Check for leakers or unacceptable containers.
      C. Check to assure material is acceptable for recycling.
   2. Delivery of clean solvents.
      A. Check shipping papers to make sure correct.
      B. Make sure truck is placarded correctly.
      C. Check for leakers.
      D. Pull samples for laboratory approval on bulk shipments and receive laboratory approval before departing plant.
   3. Perform daily inpsection on truck and fill out appropriate logs.
   4. Assist customer in anyway to insure safety and compliance with all regulations.

WAREHOUSE PERSONNEL

I. Qualifications:
   1. Education: High School Graduate or equivalent.
   2. Experience: 1 year experience or equivalent.

II. Requirements:
Must complete company training program in the following areas:
   1. Emergency Contingency Plans.
   2. Knowledge of all fire fighting equipment and proper usage of the same.
   3. Must be familiar with DOT and EPA regulations including labeling.
   4. Must be familiar with material safety data sheets for all products.
   5. Must be familiar with type of containers as per DOT and EPA regulations.
   6. Knowledge in operation of fork lift including passing a written exam.

III. Duties:
   1. Load and unload trucks.
   2. Perform daily inspection of the warehouse area.
   3. Responsible for safety and maintenance of equipment in warehouse area including:
      A. Fire fighting equipment.
      B. Fork lift.
      C. Emergency spill equipment.
   4. Responsible for all carriers including ECCD and outside carriers to be certain they are complying with DOT regulations including placarding.
   5. Perform monthly and annual inventory of all products.
   6. Assist laboratory with samples for quality control.
   7. Assure the warehouse is kept clean and picked up at all times.

STILL OPERATOR

I. Qualifactions:
   1. Education: *2 years college or equivalent.

   2. Experience: *1 year as yardman or equivalent.

II. Requirements:
   1. Completion of company training program.
   2. Knowledge of equipment including:
      A. Stills.
      B. Film Evaporators.
      C. Cooling Tower.
      D. Boilers.
      E. Pumps and Motors.

   3. Knowledge of products including material safety data sheets.
   4. Knowledge of Emergency Contingency Plan.
   5. Knowledge of Spill and Preparedness Plan.

III. Duties:
   1. Keep area clean and safe.
   2. Perform daily inspection of all equipment for leaks, spills or unsafe conditions.
   3. Maintenance of equipment.
   4. Operate stills as scheduled by Shift Foreman or Production Manager.

YARDWORKER

I. Qualifications:
   1. Education: *High School Graduate or equivalent.
   2. Experience: None

II. Requirements:
   1. Completion of company training program.
   2. Knowledge of products including material safety data sheets.
   3. Knowledge of Emergency Contingency Plan.
   4. Wear proper equipment including steel toed shoes, safety glasses, protective clothing, etc.

III. Duties:
   1. Assist still operators.
   2. Pump materials from tanks to tank and drums to tank.
   3. Assist in unloading and loading trucks.
   4. Keep area clean and safe.

PROJECT ORGANIZATION

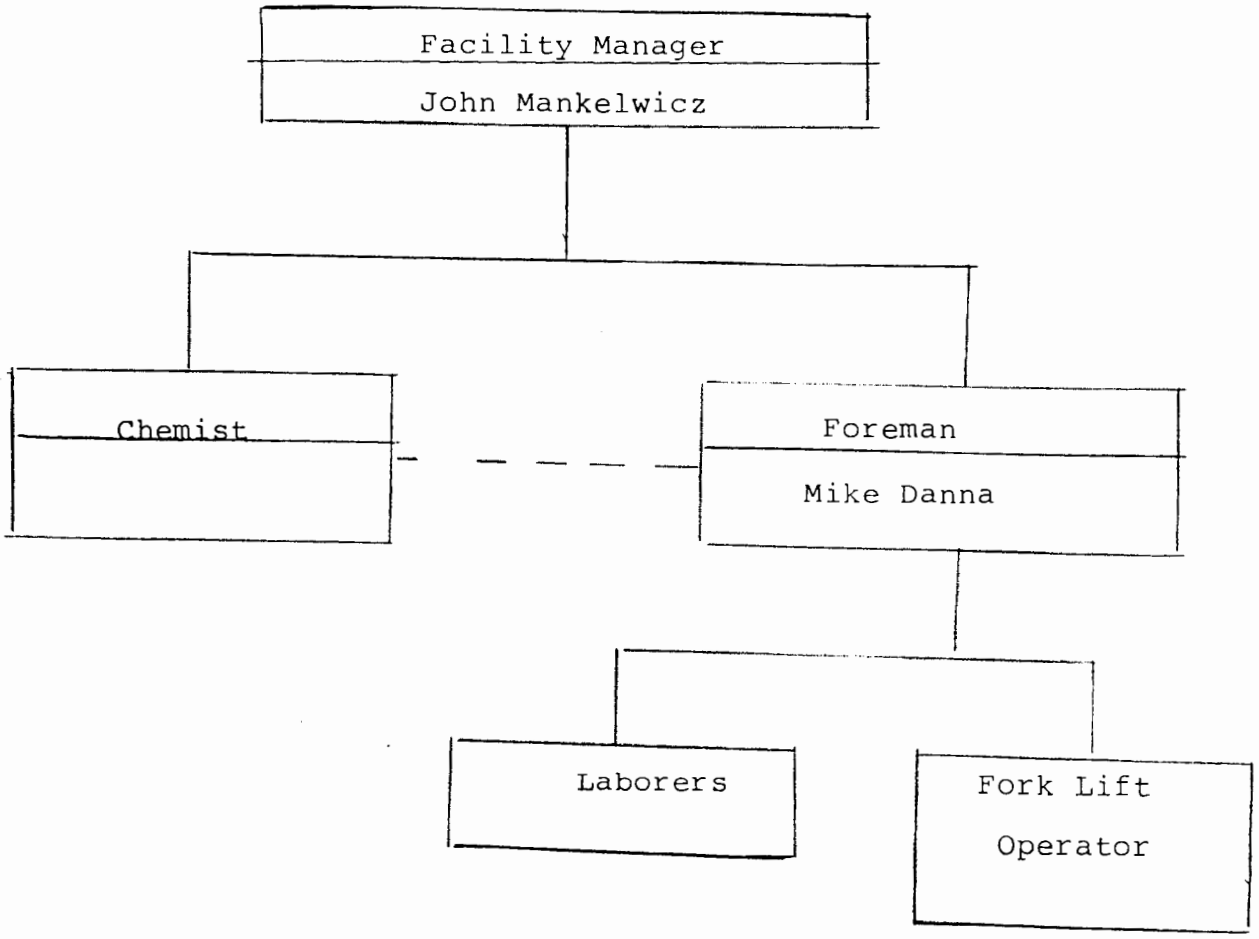


TABLE 265.16 - 4

POSITION CLASSES RELATED TO HAZARDOUS WASTE

Job Title	Number	Description and Requirements	Training
Facility Operator	1	Highest level technical or managerial. Responsible for preparation and inspection of manifests, data accuracy, and identification of waste material and detection of discrepancies. Signs receipts of shipment. Responsible for employee training and equipment inspection. Responsible for general planning of facility operation and master scheduling. Directs waste handling and placement procedures; checks material compatibility. Serves as Emergency Coordinator. College level chemistry and experience as manager.	Continuing education (a word "beyond" training) in all relevant aspects of hazardous waste management. Attendance of EPA, DOT, etc. courses and training sessions. All training received by the personnel below.
Foreman	1	Supervision of immediate shop floor and loading area workers. Issues job assignments. Responsible for clean lines and safety. Assists in employee training and equipment inspection. Checks separation of incompatible materials, liquid content of waste, and layering of vermiculite. Previous experience in hazardous waste and with equipment used.	Continuing training in hazardous waste. All training received by personnel below.
Forklift Operator		Moves containers: receiving area to storage area to processing, processing to loading. Experience: 1 year.	Instruction in labeling, placarding, transporting and storing. Static electricity, grounding, sparking.
Labor		Opens, closes, and labels containers. Adds and mixes vermiculite.	Container types and container safety. Static electricity, grounding, sparking.
Driver		Experience: Minimum of 5 years, tractor, trailer, over the road. Check by insurance company. Valid Class I driver's license.	Familiarization with forklift and labor training, DOT and EPA regulations. Spill prevention in transit. Knowledge of types of waste and safety procedures. CFR-49 on driver responsibility, plus manifesting.

SUBPART C

PREPAREDNESS AND PREVENTION

265.31 The facility will be maintained and operated to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.

265.32 Required Equipment

The facility will maintain equipment required to minimize the possible occurrence of the above mentioned situations.

Alarm systems, safety protection equipment, fire fighting equipment, security locks, warning signs, decontamination equipment, and facility communication devices will be incorporated for this operation. Facility communication will include inter-office, external, and access to beepers telephone and/or intercom system. The alarm system will be an audible one heard and available throughout the premise. Fire fighting equipment will include an automatic sprinkler system, portable fire extinguishers (foam), fire hoses, a fork truck, and non-sparking shovels. Safety equipment will include self-contained breathing apparatus (e.g., constant-flow airline respirators with portable oxygen kits), protective clothing including hard hats, gloves, boots, and coveralls. In addition to this, first aid kits, gas detection equipment, safety glasses, and emergency eye wash stations and one shower station will be available. Spill control and clean up equipment will consist of a vacuum and/or positive pumps - capable of cleaning up any spilled liquids. Absorbent materials - Quik-Dri and vermiculite will be used for spill control. Non-sparking tools will also be used to avoid fire hazard when cleaning up a spill. Warning signs reading Danger, Unauthorized Personnel Keep out, will be posted on every entrance of the facility.

265.33 Testing and Maintenance of Equipment

The facility communication systems, fire protection equipment, and decontamination (spill) equipment will be tested and maintained on a scheduled basis to assure its proper operation in time of emergency. A detailed description of the testing and maintenance of this equipment can be found in Subpart D Contingency Plan and Emergency Procedures.

265.34 Access to Communications or Alarm System

In this facility there are two locations in which hazardous waste is stored; one location in which treatment is processed, and one location for storage of treated wastes prior to shipment. All locations are adequately equipped with an emergency communication system and/or internal alarm device. All locations are within a single enclosed building.

A. Drum Storage Areas

Function: Storage of containers (55 gal.) of hazardous waste (spent solvent). These containers are unloaded from trucks and handled by forklifts (expecially equipped for drum handling).

Device: An internal alarm system is located at each drum storage area.

B. Storage Tank Area

Function: Hazardous waste (spent solvent) is stored in two tanks (2,500 gal. ea.) prior to transportation to a recycler. Hazardous waste is loaded or unloaded from these tanks by positive pumps or vacuum trucks.

Device: One explosion proof phone system is located twenty feet from tank storage area.

265.35 Required Aisle Space

At this facility, we will maintain aisle space to allow the unobstructed movement of personnel with fire protection equipment to any area of the facility in an emergency.

The drum storage areas are the only locations where hazardous waste will be stored in containers. Main aisles will be at least eight feet wide and side aisles at least four feet wide. No containers will be stored more than twelve feet from an aisle.

Special Handling for Ignitable or Reactive Waste

A description of precautions to prevent accidental ignition or reaction of ignitable, reactive or incompatible waste can be found in the section titled "General Requirements for ignitable, reactive or incompatible wastes Subpart B paragraph 265.17".

265.37 Arrangements with Local Authorities

The following are the local and State authorities to be contacted and/or informed in case of emergency:

OPERATING AND STRUCTURAL EQUIPMENT INSPECTION LOT SHEET

Inspector's name/title _____ / _____

Date of inspection _____ (month/day/year)

Time of inspection _____ (military time)

Item	Types of problems	Status (√)		Observations	Date and nature of repairs/remedial action
		Acceptable	Unacceptable		
Sump pumps (automatic)	Setting adjustment, power, clogging				
Sump pumps (manual)	Power, clogging				
Dikes	Cracks, deterioration				
Bases or foundations	Erosion; uneven settlement; cracks and spalling in concrete pads, base rings and piers; deterioration of water seal between tank bottom and foundation, wet spots				
Ramps	Erosion, uneven settlement, cracks and spalling in concrete				
Sump areas	Erosion, uneven settlement, cracks and spalling in concrete, wet spots				
Tank structural supports	Concrete deterioration and cracking, corrosion of pipe supports				
Piping to holding tanks	Loss of metal thickness, leaks, corrosion, or deterioration				
Holding tanks	Corrosion, discoloration, cracks, buckles, and bulges				

Operating and structural equipment inspection log sheet.

SUBPART D

CONTINGENCY PLAN AND EMERGENCY PROCEDURES

265.50 Applicability

The contingency Plan and Emergency Procedures are presented herewith, as specified by 40 CFR 265.50 to 265.56. The format is essentially based on information and guidance published in "Guidelines for the Development and Implementation," published by the Bureau of Solid Waste Management, Pennsylvania Department of Environmental Resources, Harrisburg, PA.

This document reflects operations at East Coast Chemical Disposal, Incorporated, Levittown, Bucks County, as of date of permit approval.

Upon review and approval of this PLAN by the AGENCY, bound copies of the final document will be maintained at East Coast Chemical Disposal, Inc. in the Levittown Office. Revisions as necessary, will be periodically submitted to the AGENCY and will be included to update the plan. Copies will be given to all local agencies, including medical, fire, police and Township.

265.51 Purpose and Implementation of Contingency Plan

The purpose of the Contingency Plan presented herewith is to minimize the hazards to human health and the environment associated with fires, explosions or an unplanned release of hazardous material to the air, soil or surface water.

Any fire, medical emergency or chemical spill at the ECCD, Inc. facility will be addressed in the enclosed plan, as required by 40CFR 265.50 - 265.56. In all cases, however, responsibility for emergency procedures remains with the Emergency Coordinator, as outlined in 40CFR 265.56.

265.52 Content of Contingency Plan

The Contingency Plan consists essentially of three (3) distinct sections, based on the type of emergency occurrence. The three types are:

Section A: Fire emergencies.
Section B: Medical emergencies.
Section C: Chemical spills.

Section A: Fire Emergencies

I Personnel Responsibilities

A. Emergency Response Team (ERT)

East Coast Chemical Disposal, Inc. will have a designated team of individuals who will respond to any

a.	Marcus Hook Borough Fire Department Robt. Kersey, Chief	494-9707
b.	Viscose Fire Company Wm. Hughes, Chief	494-9922
c.	Police Department	485-1943
d.	Ambulance/Rescue	565-4545
e.	Hospital - Sacred Heart Crozer-Chester	494-0721 447-2000
f.	Environmental Protection Agency	717/787-7381
g.	PA Dept. of Environmental Resources	717/787-4343
h.	Penna. Emergency Management Agency	717/783-8150
i.	Delaware County Civil Defense	891-4118
j.	Chemtzec Emergency Response	800/424-8802

SUBPART D

CONTINGENCY PLAN AND EMERGENCY PROCEDURES

265.50 Applicability

The contingency Plan and Emergency Procedures are presented herewith, as specified by 40 CFR 265.50 to 265.56. The format is essentially based on information and guidance published in "Guidelines for the Development and Implementation," published by the Bureau of Solid Waste Management, Pennsylvania Department of Environmental Resources, Harrisburg, PA.

This document reflects operations at East Coast Chemical Disposal, Incorporated, Levittown, Bucks County, as of date of permit approval.

Upon review and approval of this PLAN by the AGENCY, bound copies of the final document will be maintained at East Coast Chemical Disposal, Inc. in the Levittown Office. Revisions as necessary, will be periodically submitted to the AGENCY and will be included to update the plan. Copies will be given to all local agencies, including medical, fire, police and Township.

265.51 Purpose and Implementation of Contingency Plan

The purpose of the Contingency Plan presented herewith is to minimize the hazards to human health and the environment associated with fires, explosions or an unplanned release of hazardous material to the air, soil or surface water.

Any fire, medical emergency or chemical spill at the ECCD, Inc. facility will be addressed in the enclosed plan, as required by 40CFR 265.50 - 265.56. In all cases, however, responsibility for emergency procedures remains with the Emergency Coordinator, as outlined in 40CFR 265.56.

265.52 Content of Contingency Plan

The Contingency Plan consists essentially of three (3) distinct sections, based on the type of emergency occurrence. The three types are:

Section A: Fire emergencies.
Section B: Medical emergencies.
Section C: Chemical spills.

Section A: Fire Emergencies

I Personnel Responsibilities

A. Emergency Response Team (ERT)

East Coast Chemical Disposal, Inc. will have a designated team of individuals who will respond to any

fire situation that exists at the facility. Each member of the ERT has a specific responsibility, one which they have been trained to perform in addition to the aspects of fighting both regular and chemical fires.

The ERT is under the direct supervision of the ECCD fire chief (shift foreman on duty). When local fire company arrives at the facility, the ERT will transfer control and responsibility to the fire company. At this point, the ERT is available to assist as necessary. The ECCD fire chief will remain with the Fire Captain and will provide any advise or assistance as necessary.

The immediate objective of the ERT is to attempt to control a fire as soon as it is detected. This immediate response will often result in the fire being contained or extinguished. It must be made very clear, however, that unnecessary risks will NOT be taken in an attempt to contain or control a fire.

Specific responsibilities of the Emergency Response Team

1. ECCD Fire Chief
    a. Makes certain local fire company and emergency coordinator are contacted.
    b. Assesses condition of fire and directs ERT to prevent spreading to potentially hazardous areas.
    c. Makes certain all processing operations are terminated.
    d. Makes certain all facility personnel have been notified of a fire condition and that facility evacuation procedures have commenced.
    e. Directs all fire-fighting techniques until arrival of local fire company.
    f. Works in conjunction with Emergency Coordinator to assess potential hazards to human health or the environment that may result directly or indirectly from the fire (generation of any toxics, irritating or asphyxiating fumes, heat induced explosions, etc.).
    g. Reviews periodically the roster of the ERT, specifically related to knowledge and understanding of the function of each of the team members.

h. Evaluates fire-fighting equipment on regular basis and makes sure that all inoperative equipment is either repaired or replaced.

2. Notification person
   a. Notifies local fire company by phone that a fire situation exists. This will include
      (1) Company name.
      (2) Company address.
      (3) Employee name.
      (4) Any fire related information, if available, such as extent of involvement, injuries and material burning.
   b. Notifies all plant personnel via plant-wide intercom system that a fire condition exists and that facility evacuation procedures will commence.
   c. Notifies Emergency Coordinator by phone or by remote page-beeper.

3. Nozzleman
   a. Operates the hose nozzle of the fire-hose system.
   b. Upon direction of the ECCD fire chief, directs the stream from the fire hose in the appropriate manner so as to prevent the fire from spreading.

4. Fork truck driver
   a. Upon direction of the ECCD fire chief, operates the company fork truck to remove or isolate any containers in close proximity to the fire.

5. Truck driver
   a. Removes all company trucks away from fire area, so as not to block or hinder the entrance of the local fire company to the fire scene.

B. Manager/Foreman Responsibilities
1. Must evacuate department when alarm sounds or announcement is made over the intercom.
2. Is last person to leave assigned area after checking all areas that alarm may not have been heard.
3. Ensures that all operating equipment is shut down, which if left running would create a hazard.
4. Makes a "head-count" for department, notifying ECCD fire chief if anyone is unaccounted for.

C. All Employees (except ERT members)
All employees will follow the following EVACUATION RULES
1. Evacuate building when alarm sounds.
2. Do not block fire lanes.
3. Do not wait for friends.
4. Do not be casual.
5. Do not panic.
6. Do not light up a cigarette.
7. Follow specific assigned evacuation routes.
8. After leaving building, move to designated assembly location.
9. Report to your supervisor at your designated assembly location regardless of which exit is used.
10. Do not return to building or leave designated assembly location until specific instructions have been given to you.

D. All Visitors
1. All visitors are "logged in" at reception desk, indicating who the visitor is seeing.
2. Receptionist will notify supervisor if a visitor is on property at the time of the emergency and whom the visitor is with.
3. Supervisor determines whereabouts of visitor and ensures that the visitor is accounted for and is included in evacuation plan.

II Evacuation Procedures
A. The signal for premises evacuation is the fire alarm or an announcement made on the P/A system.

B. When fire alarm sounds or fire announcement is made, all employees and visitors MUST evacuate premises.
Note: Exceptions to the evacuation will be members of the ERT and designated personnel certified in CPR.

C. Evacuation areas.
1. All locations have been chosen so they are at a distance greater than 200 feet from building.
2. Every supervisor will designate an assembly area where all department employees will assemble.

D. Fire drills will be conducted monthly on a surprise basis, and will be treated as real emergency situations.

Section B: Medical Emergencies

Three (3) types of medical emergencies will be addressed in this Plan, as follows:

1. Job-related injury/accident - first aid treatable.
2. Job-related injury/accident - requiring immediate emergency treatment at local hospital.
3. Health-related emergencies such as epileptic seizures, heart attacks, etc.

I Personnel Responsibilities

A. Manager/Foreman Responsibilities

1. Must evaluate medical emergency to determine, if possible, the seriousness of the situation or the extent of injuries.
2. Will direct certified personnel as required to administer CPR or first aid.
3. Ensures that proper authorities are notified; e.g., ambulance, hospital emergency room, on-call physician, etc.
4. Ensures that any operating equipment causing the incident is secured.
5. Ensures that injured personnel are kept quiet and as comfortable as possible.
6. Completes accident investigation report to be submitted to the ERC for subsequent critique and review with the idea of remedying any unsafe situations which may have caused the accident.

B. Notification Person

Notifies all emergency services by telephone.

C. Certified CPR/First Aider - one assigned to each working shift.

Administers CPR and/or first aid to injured personnel as necessary.

D. All Employees

All employees will follow the following rules in the event of any injury or health emergency involving a fellow worker.

1. Do NOT move person.
2. Contact supervisor immediately.
3. Do not leave person until Supervisor/First Aider arrives.
4. Return to your work station at this time.

Section C: Chemical Spills

I Personnel Responsibilities

A. Emergency Coordinator and ERT

1. For details relating to duties of the Emergency Coordinator, see section 265.55, found below.
2. Emergency Response Team
   East Coast Chemical Disposal, Inc. will utilize the same Emergency Response Team (ERT), as described above in Section A - Fire Emergencies, to handle chemical spills.
   In the case of a chemical spill, however, the ERT is under the direct supervision of the Emergency Coordinator.
   In the case of a chemical spill, the immediate objective is to contain the spill and to isolate the source of the spill.

B. Supervisors/Managers

1. Maintains updated inventory of all chemicals and waste materials on hand.
2. Ensures that all containers are properly labeled.
3. Maintains a processing manual covering treatment and spill cleanup procedures for all chemicals and waste materials stored in area of responsibility.
4. Provides the appropriate protective clothing and safety equipment to employees and enforces proper usage while chemicals and/or wastes are being handled.
5. Trains employees in chemical safety.
6. Enforces all safety procedures, without exception.

C. All Employees

1. Will follow all safety procedures at all times.
2. Will wear appropriate protective clothing and safety equipment as required by foreman.
3. Must become familiar with all processing guidelines and usage of chemicals in assigned department.
4. Must report chemical spills to supervisor/foreman at once.

II Chemical Spill Procedure - this procedure is under direction of shift foreman or by E/C.

A. All persons contacted by a chemical or a solvent MUST wash off with water and change clothing. Minimum washing time is 15 minutes for contacts above the neck. Five minutes washing is usually suffi-

cient for all other parts of the body. Additional cleanup will be at discretion of foreman.

B. E/C and the ERT will be notified in case of a spill. The E/C will be contacted by phone or remote page-beeper if not at facility.

C. All other plant personnel will be notified if large spill occurs or if their protection or safety is necessary.

D. The E/C and ERT will proceed to the spill location and will determine:
   1. Product involved in the spill.
   2. If spill resulted from leak, attempt to stop leak and contain spill.
   3. If facility evacuation is necessary.
   4. If notification of appropriate outside agencies is required.

E. If spill is determined to be flammable, all ignition sources within 50 feet of spill will be removed by ERT.

F. Spill will be cleaned up using all available equipment including special vacuum trucks, earth-moving equipment, "MUD HOG" pumps, "KWIK-DRI", vermiculite, etc.

G. All equipment contacting the spill will be decontaminated and will be reorganized for future use by the ERT after area has been secured.

H. Appropriate agencies will be notified, as necessary, of the incident and the progress of the cleanup effort.

265.53 Copies of Contingency Plan

East Coast Chemical Disposal, Inc. will provide copies of the Contingency Plan for distribution, as follows:

Original - Administrator's office
One Copy - shift foreman's office
One Copy - US EPA Region III office
One Copy - Pennsylvania DER - Norristown office
One Copy - local fire company
One Copy - local police department
One Copy - local township officials

265.54 Ammendment of the Contingency Plan

The Contingency Plan will be reviewed periodically and will

be amended as necessary. Distribution of the ammended plan will be as per 265.53, above.

265.55 Emergency Coordinator

I Designation of Emergency Coordinator

East Coast Chemical Disposal, Inc. has designated:

Lewis Maslow	Office	201/862-1106
	Home	
	Page-beeper	

Other persons qualified to act as the Emergency Coordinator are:

Philip Einhorn	Office	
	Home	215/674-8259
	Page-beeper	
Miles B. Potter, P.E.	Office	215/628-2973
	Home	215/441-0577
	Page-beeper	

II Responsibilities of Emergency Coordinator

The E/C shall comply with the requirements of 40CFR 265.56 whenever an imminent or actual emergency arises. In addition, the E/C shall follow these guidelines.

A. E/C or his designee will activate the alarm system to notify all facility personnel of an emergency situation.
B. E/C or his designee will notify all required authorities (See Appendix 1 for list).
C. E/C will determine the extent of the problem.
D. E/C directs efforts of the ERT.
E. E/C will evaluate need for containment.
F. E/C will evaluate need for evacuation and/or shutdown.
G. E/C will institute follow-up procedures in event of an accident.

265.56 Emergency Procedures

I Spill Cleanup

Chemical spills will be cleaned up as quickly as possible after the incident. The E/C will direct all cleanup operations, whether by use of absorbents or vacuum truck. All cleanups will be conducted in accordance with all federal, state and local regulations. All cleanup personnel will be required to use the proper protective clothing and equipment during cleanup operations.

A. Procedure for Organic Solvent Spills (includes halogenated solvents)
   1. Soak up small spills with Quik-Dri or vermiculite.
   2. Wear protective equipment including, but not

limited to, rubber gloves and boots, protective suits and organic vapor respirators.
3. Do not enter confined areas without SELF-CONTAINED BREATHING APPARATUS.
4. Spent or used absorbant will be shovelled into approved 17E/17H open-head drums for subsequent disposal per state and federal regulations.

B. Procedure for Acid Spills
1. All acid spills will be neutralized with bagged lime or soda ash.
2. Same procedures as A above will apply, as regards protective equipment, entering confined areas and spent absorbants.

C. Spills occuring outside diked areas.
All chemical processing and storage areas at ECCD, Inc. have been designed with spill-containment in mind. Dikes or small beams will be placed around each storage or processing area. If, however, the dikes cannot, for some reason, contain the spill, or if the spill occurs outside the diked area, the following will be operative.
1. New earthen dikes will be made with earth moving equipment in an attempt to contain spill.
2. Dry absorbant will be spread.
3. Trenching to direct spill flow to a temporary holding pond.
4. Utilize vacuum tanker or "MUD HOG" pump to remove impounded spill.

II Emergency Equipment
ECCD, Inc. utilizes emergency equipment that complies with 40CFR 264.32. These requirements will, of course, be exceeded when deemed necessary by the E/C or the ERT.
A. Telephone system - will consist of
1. Inter-office communications.
2. External communication.
3. Access to page-beepers.

B. Alarm system - the building is a 12,000 square foot structure and will have an audible alarm system that will be activated by the fire sprinkler system or when the manual fire alarm is activated. The activation of the alarm will also notify the Bensalem Township Fire Department of a fire situation.

C. Spill Control and Clean-up Equipment
1. Vacuum truck - capable of pumping up any spilled liquids.

2. Absorbant materials - Quik-Dri and Vermiculite will be used for spill control.
3. Non-sparking tools - shovels, picks, etc.
4. Maintenance hand tools.
5. Positive Pumps.

D. Fire Protection Equipment
1. Automatic sprinkler system.
2. Portable fire extinguishers using foam or dry chemicals.
3. Fire hoses (water with chemical additives).
4. Fork truck.
5. Non-sparking shovels.

E. Safety Protection Equipment
1. Self contained breathing apparatus.
2. Organic vapor chemical respirators.
3. Protective clothing.
4. First aid kits and Por-T-Pak portable oxygen units.
5. Emergency eye wash and shower stations.

III Testing and Maintenance of Emergency Equipment

A. ECCD will inspect on regular basis all facility communication and alarm systems, spill control, fire protection and safety protection equipment.
B. Much of the emergency equipment is in daily use and, accordingly, is inspected on a daily basis. These items include:
1. Fork truck.
2. Vacuum truck.
3. Telephone system.
4. Hand tools.
C. Equipment not in daily use will be inspected either on weekly or monthly basis. All first aid kits will be maintained and inspected by Zee Medical Services, a supplier of first aid necessities.
D. All inspections will be recorded on the appropriate equipment checklists for review by the E/C on a monthly basis.
E. All inspection checklists will be filed for easy access and will be kept at the ECCD, Inc. facility for a minimum of three years.

APPENDIX I

Emergency Coordinator

Lewis Maslow	Office: 215/485-6100
Greenhill W414, 1001 City Ave,	Home: 215/642-3638
Philadelphia, PA 19151	Page-beeper:

Other qualified acting Emergency Coordinators.

Rex A. Hunter	Office: 215/675-1880
295 W. Street Road	Home: 215/672-8941
Warminster, PA 18974	Page-beeper:
	Office:
	Home:
	Page-beeper:

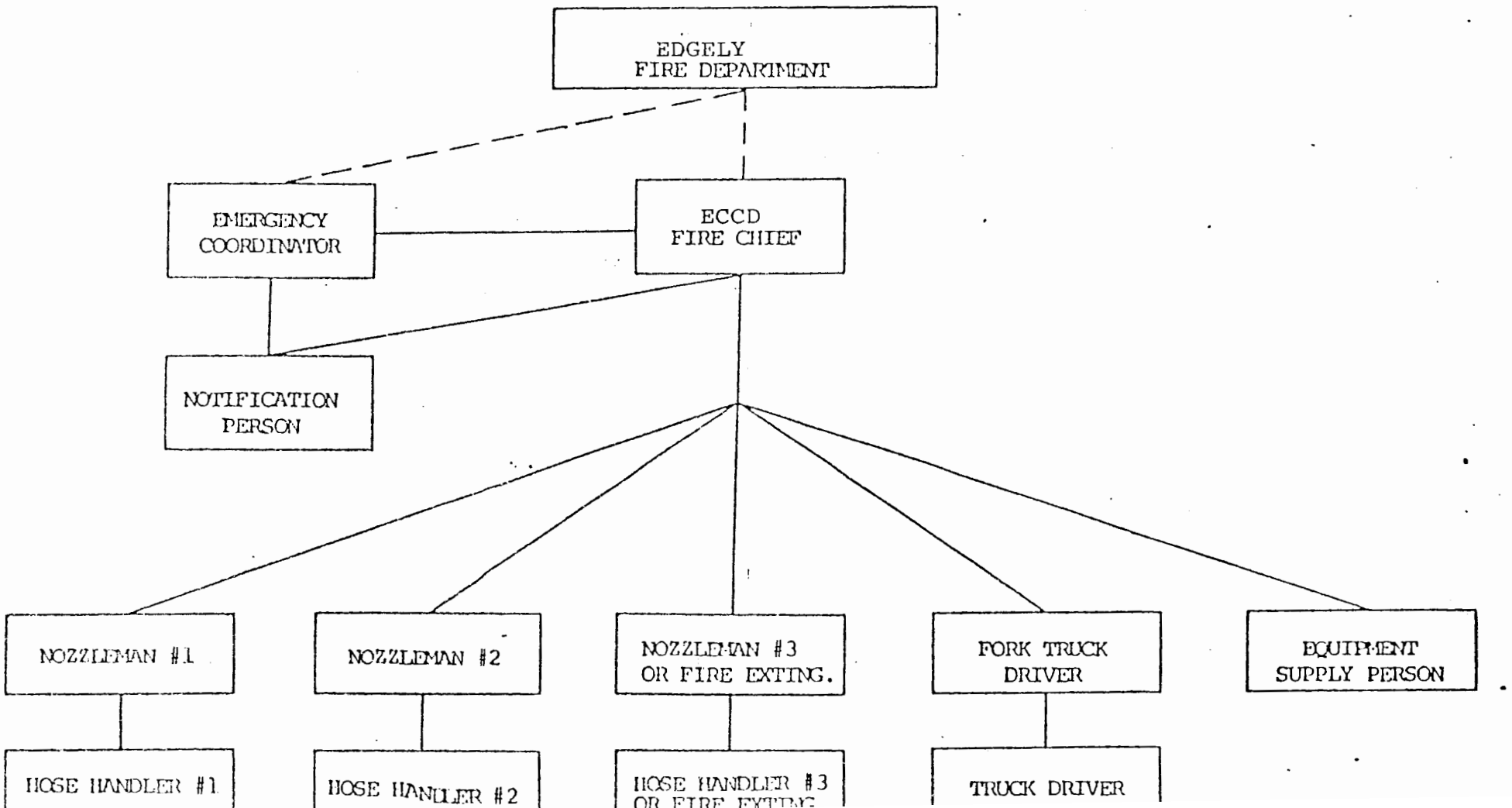
Other important numbers, ECCD, Inc. personnel.

Name: Philip Einhorn	Office:
Title: Chemist	Home: 215/674-8259
Name:	Office:
Title:	Home:
Name:	Office:
Title:	Home:

Marcus Hook Fire Company	215/494-9707
Marcus Hook Ambulance	215/565-4545
Marcus Hook Borough Police	215/485-1943
Delaware County Emergency	215/891-4118
Dept. of Transportation (Commonwealth) (DOT)	717/787-7445
Environmental Protection Agency (EPA)	215/597-9800
PA Dept. of Environmental Resources (DER)	717/787-4526 xxxxx 7383
PA Dept. of Health	717/787-6436
Chemtrec Emergency Response Number	800/424-9300
Sacred Heart Hospital 9th & Holland Ave., Chester	215/494-0721
Crozer-Chester Hospital 15th & Upland, Upland	215/447-2000

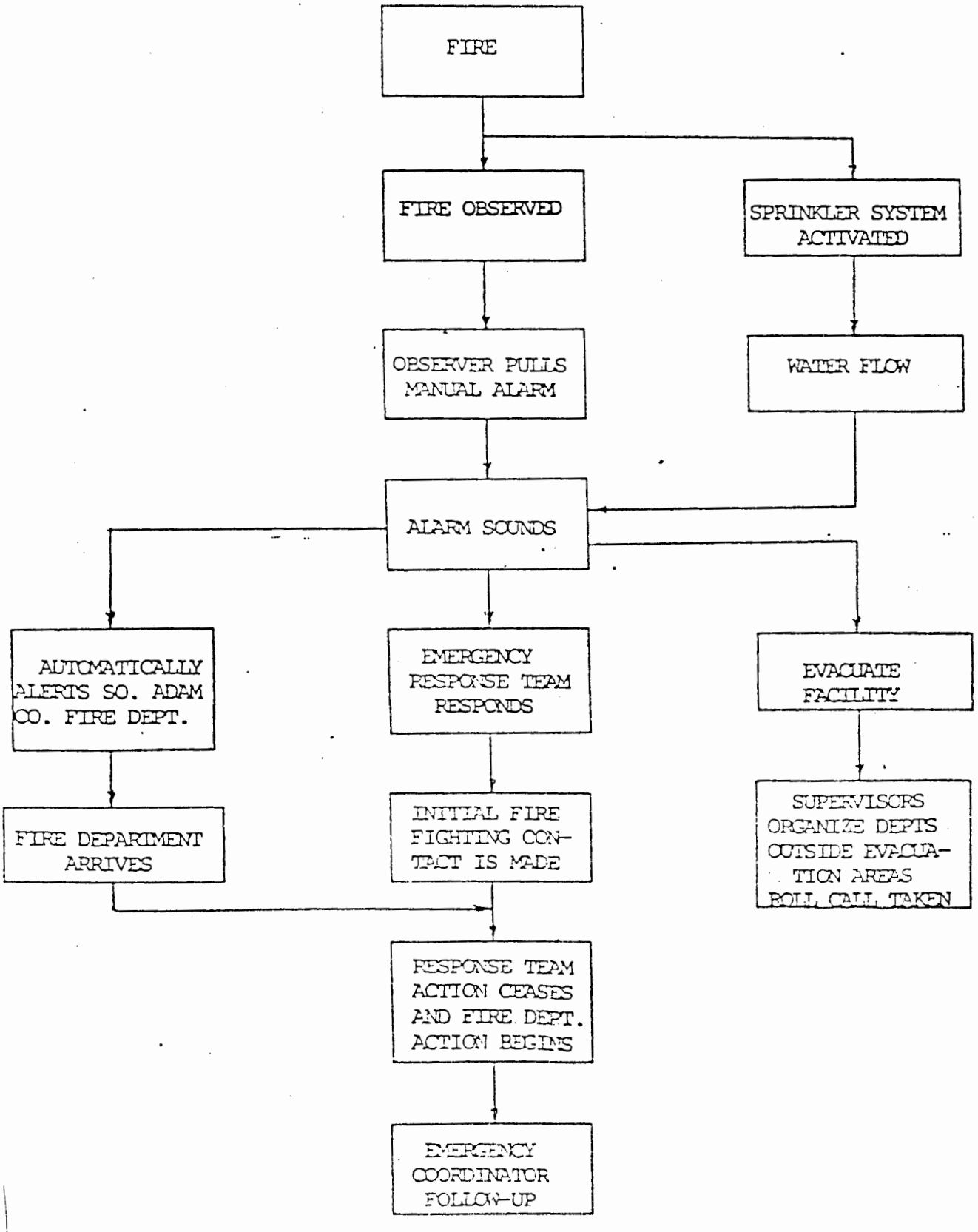
EAST COAST CHEMICAL DISPOSAL, INC.

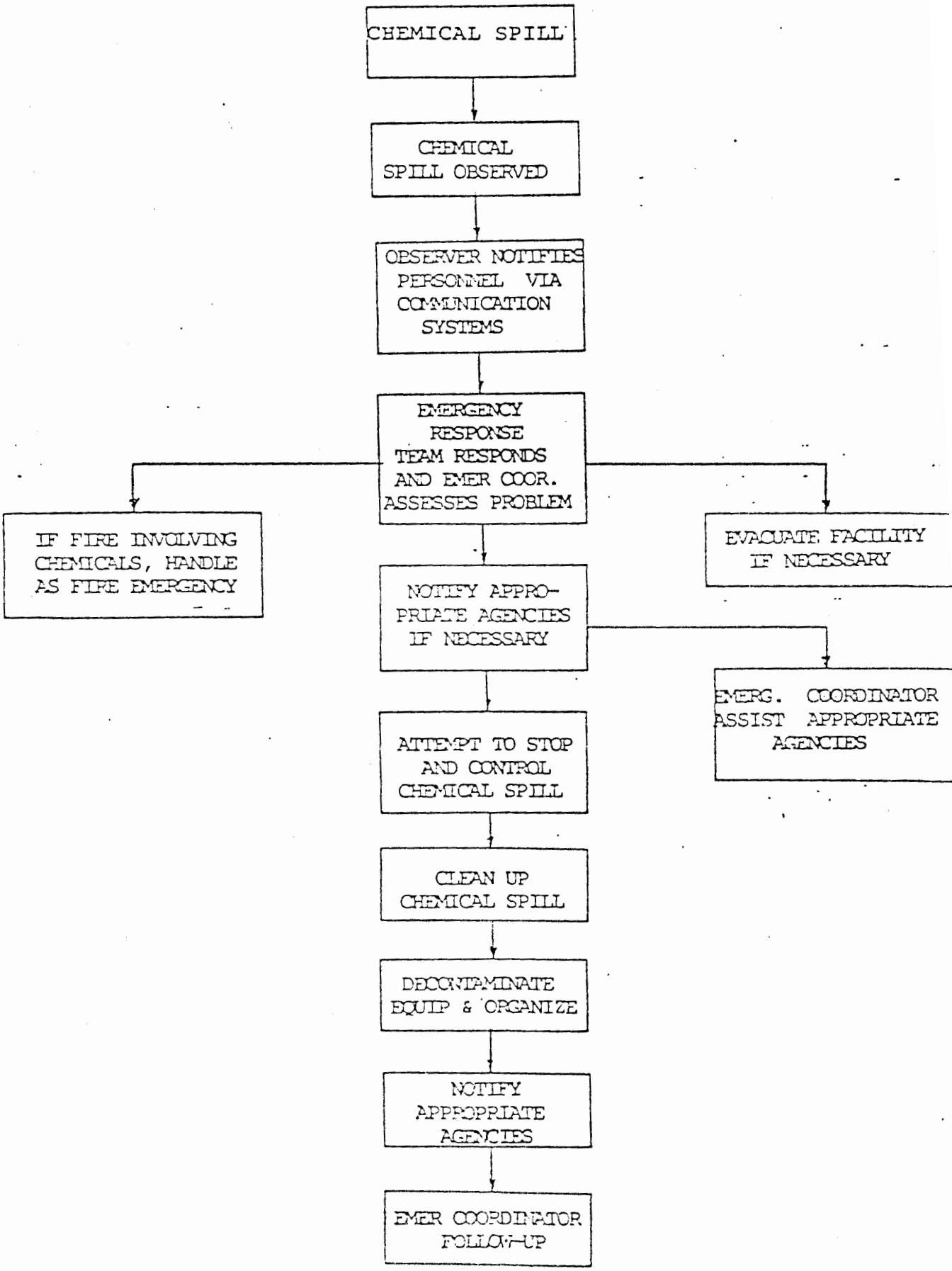
EMERGENCY RESPONSE TEAM



EMERGENCY FIRE PROCEDURES

SECTION 1




CHEMICAL SPILL
CHEMICAL SPILL OBSERVED
OBSERVER NOTIFIES PERSONNEL VIA COMMUNICATION SYSTEMS
EMERGENCY RESPONSE TEAM RESPONDS AND EMER COOR. ASSESSES PROBLEM
IF FIRE INVOLVING CHEMICALS, HANDLE AS FIRE EMERGENCY
EVACUATE FACILITY IF NECESSARY
NOTIFY APPROPRIATE AGENCIES IF NECESSARY
EMERG. COORDINATOR ASSIST APPROPRIATE AGENCIES
ATTEMPT TO STOP AND CONTROL CHEMICAL SPILL
CLEAN UP CHEMICAL SPILL
DECONTAMINATE EQUIP & ORGANIZE
NOTIFY APPROPRIATE AGENCIES
EMER COORDINATOR FOLLOW-UP

DO's and DON'T's of CHEMICAL SPILLS

DON'T's

* Never try to determine what the chemical spill is by tasting or sniffing.
* Do not add water to spills. This only spreads the problem and it might splatter.
* Do not attempt to neutralize a spill without proper personal protective equipment.
* Do not handle even "neutralized" chemicals with bare hands.
* Do not leave chemical spills unattended.
* Do not walk in chemical spills.

DO's

* Know your chemicals and processes and label all chemicals so that there are minimum "unknown" spills.
* Use pH strips to determine pH.
* Call someone who would know what it is.
* Use appropriate chemical spill neutralizer.
* If chemicals should get on you during a spill, take care of yourself first.
* Even if you do know how to clean the spill yourself, call for hel
* Eliminate all sources of ignitio around flammable solvent spills.

CONDITION OF TRACTOR			QUANTITY OF ABSORBENT BAGS*			QUANTITY & CONDITION OF NON-SPARKING SHOVELS			COMMENTS	INSPECTED BY	DATE
Ignition	Tires	Scoops Operational	Warehouse	Receiving Shed	Drum Filling Room	Operator Cover	Receiving Shed	Drum Filling Room			

EMERG CY EQUIPMEN HECKLIST (NTHLY)

FIRE HOSE CONDITION			LEVEL IN ATC TANK	PORTABLE FIRE EXTINGUISHERS		SELF CONTAINED BREATHING APPARATUS			INSPECTED BY	DATE
HOSE #1	HOSE #2	HOSE #3		QUANTITY	COMMENTS	WEAR/ CRACKS	ALARM FUNCTION	PRESSURE		

PORT-T-PAKS		ORGANIC VAPOR RESPIRATORS			EYE WASH STATIONS OPERATIONAL	EMERGENCY SHOWER OPERATIONAL	COMMENTS
QUANTITY	PRESSURE	QUANTITY	CRACKS	REPLACEMENT CARTRIDGES			

SUBPART E

MANIFEST SYSTEM, RECORDKEEPING AND REPORTING

265.70 Applicability

East Coast Chemical Disposal, Inc. will operate an on-site, fully enclosed facility for storage, treatment and disposal of hazardous wastes. ECCD will transport from generators to it's facility for treatment and then transport again to a certified disposal area. Some of the materials will be transported to a licensed resource recovery facility.

265.71 The Manifest System

The system contains specifications, labeling, placarding, shipping papers and receiving papers. Disposal will be off-site. In general, ECCD will comply with 40CFR parts 264, 265, 122 and 266 regulations.

265.72 Manifest Discrepancies

ECCD will be its own transporter, therefore, it will return a copy of the manifest to the generator of the waste within 30 days. Should any significant discrepancies in the type or quantity of the waste received be apparent, EPA will be notified should the discrepancy not be resolved.

When ECCD transports to a certified off-site receiving area (within or outside the Commonwealth), a manifest will be prepared on forms provided by EPA and/or DER.

265.73 Operating Record

The operating record will contain detailed information of this facility's operation and will record the following:

1. Description and quantity of each hazardous waste received, the method and date of treatment, storage and disposal.

2. Location of storage and processing area. No disposal will be done at this facility, only storage and treatment.

3. A manifest document number.

4. Name, address, telephone number and identification number of generator, transporter, and treatment, storage or disposal facility.

5. U.S. D.O.T. shipping name, hazardous waste class and UN number (see 49CFR parts 172.101, 172.102 and 172.103).

6. The physical form; solid, liquid or gas - total quantity of each hazardous waste by units of weight or volume and the type and number of containers.

7. A certification that the named materials are properly certified according to requirements of DOT, EPA and DER.

8. The manifest will consist of six (6) copies, with copies 1, 2, and 3 detaching into two (2) parts A and B. Generator will complete Part A of all copies of the manifest, dated and certified.

9. For Intrastate shipments, the generator shall retain a complete Copy 2 and Part A of Copy 3 for his records.

10. For Interstate shipment of hazardous waste, the generator will detach Part A of Copies 1, 2 and 3, distribute Part A, Copy 1 to the disposer state, Part A, Copy 2 to the generator state and retain Part A, Copy 3 for his records.

11. The transporters authorized representation will carry the remaining copies of the manifest along with the shipment.

12. When the shipment is delivered to the designated treatment, storage or disposal facility, or to transporter number two (ECCD will be transporter number one), transportee number one will sign, date and certify delivery of the shipment, obtain the signature, date of receipt of shipment and certification of the treatment, storage or disposal facility's (usually ECCD) authorized representative or authorized representative of transporter number two and detach and retain Copy 5 of the manifest.

13. Transporter number two, upon delivery of the shipment to the designated treatment, storage or disposal facility, will sign, date and certify the delivery, obtain signature, date of receipt of shipment and certification of the treatment, storage and disposal facility's authorized representative and detach and retain Copy 6 of the manifest.

14. For shipments within the Commonwealth of Pennsylvania, the treatment, storage, or disposal facility's authorized representative shall retain complete Copies 1 and 4 of the manifest and return Part B of Copy 3 to the generator.

15. Shipments of waste interstate, the treatment, storage or disposal facility's authorized representative will detach and distribute Part B of Copies 1, 2 and 3 of the manifest in the following manner:
    a. Treatment, storage or disposal facility's authorized representative shall forward Part B of Copy 1 of the manifest to the state in which the designated treatment, storage or disposal facility is located.
    b. Treatment, storage or disposal facility's authorized representative shall forward Part B of Copy 2 of the manifest to the state in which the generator of the hazardous waste is located and will return Part B of Copy 3 of the manifest to the generator within 24 hours after delivery of the shipment. The treatment, storage or disposal facility will retain Copy 4 for its records.

16. Each manifest form shall record a maximum of two (2) transporters. If more than two transporters are to be utilized, the generator shall complete additional manifest forms and reference the first manifest document number on such additional manifest forms.

17. If more than four (4) hazardous wastes from the same generators are to be shipped in the same shipment, the generator shall complete additional manifests for each group of four or less hazardous wastes.

265.74 Availability, Retention and Disposition of Records

18. Copies of the manifest retained by the generator and the treatment, storage or disposal facility shall be furnished to the Department upon request.

19. The transporter shall not accept a shipment of hazardous waste from a generator or another transporter unless the shipment is accompanied by a completed manifest.

20. A transporter shall not accept or transport a shipment of hazardous waste under the following conditions:
    a. Leaking, damaged containers not in compliance with requirements.
    b. Which are not labeled, marked and placarded properly.
    c. Unless the number and type of containers to be transported are as stated on the manifest.

21. Hazardous waste shipments shall be transported only to:
    a. The hazardous waste storage, treatment and disposal facilities which the generator has designated on the manifest as a facility permitted by EPA or DER to manage such waste or as a facility not within the Commonwealth which is authorized to manage such waste by a State or Federal Government; or
    b. The next designated transporter.

22. A transporter of hazardous waste shall ensure the following are performed:
    a. The number of copies of the manifest required by EPA and/or DER accompany the shipment of hazardous waste at all times.
    b. The shipment complies with all applicable U.S. D.O.T. and PA D.O.T. requirements and regulations.
    c. Delivery of the entire quantity of hazardous waste which he has accepted from a generator or a transporter.

23. All closure records will be submitted to EPA and/or DER.

265.75 Annual Report

A single copy of an annual report will be submitted to the Regional Administrator by March 1 of each year.

DER will require quarterly reports on forms designated by the Department containing the following information:

A. The name, identification number, mailing address and the location of the generator.

B. The name and telephone number of the generator's contact person.

C. The identification and license number of each transporter.

D. The name, identification number and address of the HWM facility.

E. The description, DOT hazardous class and hazardous waste number and date of treatment, storage, or disposal of the hazardous waste.

F. The amount and units of measure of each hazardous waste in a shipment.

G. The manifest document number for each hazardous waste.

H. Signature and certification of the HWM's authorized representative.

I. The information required by items C, D, E, F, and G of this sub-paragraph shall be provided for each shipment of hazardous waste and each waste stream within the shipment.

Quarterly reports are due April 30, July 31, October 31 and January 31 of each year.

The operator of this on-site facility shall report the following:

1. Emissions, discharges, fires, and explosions.
2. Ground water contamination.
3. Facility closure (see Subpart G).

265.76 Unmanifested Waste Report

This facility will not accept for treatment, storage or disposal any shipment of hazardous waste without an accompanying manifest. If the generator provides a certification that the waste qualifies for exclusion, then an exception can be made.

265.77 Additional Reports

In addition to the annual report a listing will be made of the following as specified in parts 265.56 (J).

1. Releases, fires and explosions.
2. Ground water contamination.
3. Facility closure.

SUBPART F

GROUND WATER MONITORING

265.90 Applicability

The entire storage and treatment operation at this facility will be indoors, with area dikes to contain leaks or spills. Therefore, there is no need for ground water monitoring.

SUBPART G

CLOSURE

265.110 Applicability

This closure plan will describe the manner by which closing of the facility is planned. Involved in the closure are drums, perhaps tanks and processing equipment.

265.111 Closure Performance Standards

At closure all hazardous waste and hazardous waste residue will be removed from tanks, treated and transferred to a certified disposal area. All drums will have been treated and transferred to a certified disposal area.

Discharge control equipment and discharge confinement structures will be cleaned and decontaminated. All areas of the building will be cleaned, checked and decontaminated as needed. Since all storage and treatment processes will be conducted within this fully enclosed building, no post-closure surveillance is deemed necessary.

When closure is completed, all facility equipment and structures will be properly disposed of, or decontaminated. There will be no further need of maintenance.

The operator will then submit to EPA and/or DER certification both by the operator and an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

265.112 Closure Plan: Amendment of Plan

We have established the following dates to comply with the regulations although we would not anticipate any logical reason to close the facility on the projected dates.

1. Final date waste solvents will be accepted. May 1, 1997.
2. Dates for completion of inventory disposal:
    a. Date that all ignitable solvent will be distilled: May 15, 1997.
    b. Date that all non-combustible solvent will be distilled: May 31, 1997.
    c. Date that all clean solvent inventory will be disposed of off-site: June 15, 1997.
    d. Date that all equipment, confinement structures and building areas will be decontamined: June 7, 1997.

e. Date that all hazardous waste (still bottoms or non-recyclable waste) will be disposed off-site, (Class 1 landfill, incinerator or other approved disposal method): June 7, 1997.

3. Final closure will be completed June 15, 1997.

4. Total time required to close the facility: 46 days.

265.113 Time Allowed for Closure

As indicated in the closure plan 265.112 - final date for receiving hazardous waste is May 1, 1997, final closure will occur on June 15, 1997 for a total closing time needed for the facility of 46 days.

265.114 Disposal of Decontamination of Equipment

To proceed with closure, the ignitable inventory would be phased out first. Processing tanks would then be processed with chlorinated or other non-combustible solvents. This procedure would result in all of the processing tanks being washed out with non-combustible material, leaving them non-combustible. In this cleanup procedure, pumps, lines, stills, condensers and related equipment would be left non-combustible and free of contamination. Approximately 50 gallons of recycled chlorinated solvent will be used for tank cleaning. The solvent would be disposed of in an approved landfill or approved method of disposal.

Storage drums (D.O.T. Specifications drums) are used by this facility. Every drum will be sent to a drum reconditioner when empty. Still bottoms will be sent to a certified landfill for disposal. These are non-combustible and should pose no problem.

Any drums not reconditionable would be sent to a certified landfill for disposal.

265.115 Certification of Closure

When closure is complete, a certification of closure will be prepared and certified by the operator and a registered professional engineer, stating that the closure is in accordance with the specifications in the approved closure plan.

265.117 Post-Closure Care

No post closure plan will be needed.

265.118 Amendment of Plan

The present plan calls for a 15 year period of operation - should a shorter or longer operational time be anticipated, then an amended closure plan will be presented for approval.

265.119 Notice to Local Land Authority

At closure, all evidence of this hazardous waste storage and treatment facility operation will have been removed and the facility structure will revert to its original condition. No disposal will have been done at this facility.

265.120 Notice in Deed of Property

After closure of this facility operation, the physical structure will be returned to its owner in the condition found when originally occupied by ECCD. There will be no residuals which would be of harm to human health or the environment.

DECONTAMINATION AT TIME OF CLOSURE

At the time of closure, the subject facility will be subjected to an extensive decontamination procedure. This procedure will consist of collection and disposal of residual solids, cleaning of general faciltiy surfaces and equipment, and cleaning of waste processing units. The approaches to be used are detailed in this section.

Residual Solid Wastes

Residual solid wastes consist of materials such as pallets and skids used in the waste storage cells, drums, disposable personal protective equipment, and small amounts of sorbents and general trash and debris that was generated in the handling of hazardous wastes.

These materials will be collected and packaged for transportation to and disposal at a suitable hazardous waste TSD facility. Potential methods of disposal are landfilling and incineration.

Residual Hazardous Wastes

It is not anticipated that large quantities of listed hazardous wastes will require disposal at this time of closure. However, it is possible that after several years of operation of this facility, there may be some minor build-up on the surfaces of processing equipment and in tank bottoms.

Should this occur, these materials will be categorized via the testing protocols described in other sections of this document. Once characterized, these residuals will be classified as to their compatibility, the necessary number and type of EPA and DOT approved containers will then be used to ready this material for transport and final disposal.

General Clean-Up

All waste loading/unloading, storage, and treatment areas will be subjected to a general cleaning. This will be done using either steam or appropriate self-contained liquid cleaning equipment. Pieces of equipment used in the handling of hazardous wastes such as fork lifts, drum movers, etc., will also be steam cleaned. All liquids generated in this phase will be collected for off-site disposal.

Decontamination of Waste Treatment Facility

Waste treatment fixtures include tanks, piping, pumps, mixers, and other fixed equipment used in the treatment of hazardous wastes. Decontamination of this equipment will require a multi-step cleaning operation. Also, it will be dependent to some extent on the wastes processed.

This facility plans to treat both aqueous and organic liquids and sludges. The following plan will be used for assuring removal of residuals.

In step one, all fixed equipment will be visually inspected for accumulations of hazardous wastes. All accumulations noted will be physically and/or chemically removed and disposed of according to the Residual Hazardous Wastes section. In step two, all fixed equipment will be cleaned on its internal contact surfaces with detergent solutions. This solution will be discarded as a hazardous waste. In step three, all fixed equipment will be cleaned on its internal contact surfaces with an organic solvent. This solvent will be carefully chosen to be effective, but present little to no hazard. Again, this solution will be discarded as a hazardous waste. Step four will be a high pressure, clean water rinse of all internal contact surfaces with the rinse water discarded as a hazardous waste.

Once this four step process is complete, a sample collection and analysis program will be instituted to provide laboratory data on the effectiveness of the clean-up. In this program, the internal surfaces of processing equipment will be rinsed with distilled, deionized water. The water volume will be approximately one-tenth of the volume of the unit being sampled. Aliquots of these samples will be analyzed for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Additional aliquots will be analyzed be gas chromatography/mass spectrometry.

The facility will be deemed to be decontaminated if both the levels of the metals listed above are ~~less than 100 times~~ the U.S. Public Health Service Primary Drinking Standards in effect at the time this permit is issued and concentrations of organics detected by GC/MS are less than one mg/litre for a single compound and ten mg/litre for all organics.

Should either analytical criteria not be met on a processing unit, the four step decontamination procedure and the sample collection and analysis program will be repeated on that unit.

Should either analytical criteria not be met on a processing unit after the second cleaning cycle, this unit will be disposed of as a hazardous waste.

SUBPART H

FINANCIAL REQUIREMENTS

265.140 Applicability

ECCD being the operator of hazardous waste treatment, storage and disposal facility is responsible for compliance procedures pursuant to RCRA or regulations issued under the authority of RCRA.

265.141 Definitions

"For the purposes of this subpart, a compliance procedure is considered to be pending from the time an order or notice of intent to terminate is issued or judicial proceedings are begun until the Regional Administrator notifies the owner or operator in writing that the violation has been corrected or that the procedure has been withdrawn or discontinued."

"Standby Trust Fund" means a trust fund which must be established by an owner or operator who obtains a letter of credit or surety bond as specified in these regulations. The institution issuing a letter of credit or surety bond will deposit into the standby trust fund any drawings by the Regional Administrator on the credit or bond.

265.142 Cost Estimate for Facility Closing

This estimate is based on an orderly planned closure procedure by the operator of the facility.

1.	Cost of chlorinated solvent for decontamination purposes. 500 gallons @$3.00	$1,500.00
2.	Two men operating pump and decontamination. 80 man hours @$10.00	800.00
3.	Drum disposal (one) including transportation.	50.00
4.	Scrapped disposal of two drums.	100.00
5.	Dismantle machinery, equipment, decontaminate.	1,050.00
6.	Dismantle diked storage areas and decontaminate.	1,500.00
7.	Decontaminate balance of facility.	1,000.00
8.	Decontaminate and repair drives and parking areas.	7,000.00
9.	Preparation of certificate of closure and certification by a registered professional engineer.	500.00
10.	Contingency.	1,500.00
		$15,000.00

265.143 Financial Assurance for Facility Closure

East Coast Chemical Disposal, Inc. will provide a Surety Bond guaranteeing performance of closure, in the amount of fifteen thousand ($15,000.00) dollars. The performance bond for closure is worded according to Part 264.151(c).

264.144 Cost Estimate for Post-Closure Monitoring and Maintenance

Since there will be no disposal at this facility, and at the completion of closure no health or environmental hazards will exist, post-closure need not be implemented.

264.145 Financial Assurances for Post-Closure Monitoring and Maintenance

Post-Closure will not be needed (See Part 264.144).

265.146 Use of Mechanism for Financial Assurance of both Closure and Post-Closure

A surety bond (Performance) guaranteeing closure only will be submitted to the Regional Administrator by registered mail. (See Part 265.143)

264.147 Liability Requirements

ECCD will secure and maintain liability insurance for sudden occurrences in the amount of at least one million ($1,000,000.00) dollars per occurrence with an annual aggregate of at least two million ($2,000,000.00) dollars, exclusive of legal defense costs. An original signed duplicate of the insurance policy will be delivered to the Regional Administrator by certified mail and worded according to Part 265.151(e).

265.148 Incapacity of Institutions Issuing Letters of Credit, Surety Bonds or Insurance Policies

Should the issuing Institution become bankrupt, insolvent, or have its license or charter suspended or revoked, the operator will establish financial assurances and liability coverage within 60 days of such events.

265.149 Applicability of State Financial Requirements

The Commonwealth of Pennsylvania has not yet established primacy in the issuance of Permits for HWM, no requirement.

265.150 State Assumption of Responsibility

The Commonwealth of Pennsylvania does plan to establish Permit primacy sometime in mid-year of 1982, at which time ECCD will meet any additional requirements.

265.151 Wording of the Instruments

The wording of the Closure Performance Surety Bond will be worded according to part 264.151 (c) and for the Hazardous Waste Facility Endorsement according to part 264.151 (g).

SUBPART I

USE AND MANAGEMENT OF CONTAINERS

265.170 Applicability

East Coast Chemical Disposal, Inc. believes that the primary containment source is the best containment source. The drum itself provides the best means of containment of a hazardous waste, and everything is done to protect the container during storage and handling operations. This includes using forklift trucks which are specially designed for handling drums. These trucks provide the best grip without damaging the drums. Personnel who will handle the containers are trained and tested in the proper operation of the forklift truck. The container storage areas are designed so that aisles are wide enough to allow easy movement of the forklifts around the containers. All of these precautions and procedures will minimize container damage.

265.171 Condition of Containers

Only D.O.T. specification drums are used to store hazardous waste. All containers are thoroughly inspected for damage, leaks, corrosion, etc., before we accept the container and its contents at this facility. Trained personnel continue to inspect these containers on a daily basis during the storage period to assure compliance with E.P.A. regulations.

When inspection of a container indicates that the container is not in an acceptable condition, the contents will immediately be transferred to an acceptable container. Containers holding hazardous waste will always be closed during storage except when it is necessary to add or remove waste.

265.172 Compatibility of Waste with Container

Containers used are of the type specified by the Department of Transportation. Should a container be received that does not meet specifications, the contents are transferred to an acceptable container. Prior to transferring the contents, at least four (4) tests must be made to verify its contents.

265.173 Management of Containers

Whenever inspection of a container indicates that the container is not in acceptable condition the contents are immediately transferred to an acceptable container. All containers holding hazardous waste will be closed during

storage except when it is necessary to add or remove waste. Prior to transferring the material, at least four (4) tests must be made to verify the contents.

Each containment area for drum storage is a concrete slab surrounded by a 6" x 6" concrete curb or dike.

Inspections

All containers (drums) are inspected daily on operating days. This frequency insures early detection of any possible leaking containers.

Inspections are conducted with a general attitude of concern for personnel and environmental safety. Inspectors will look for proper labeling, leakers or any possible hazardous situation.

The Container Inspection Checklist will be documented immediately, initialed and dated by the inspector.

The slab and dikes will be checked for cracks and deterioration.

Each storage area will be inspected for accumulated leaks or spills and provision made for proper cleanup.

Inspectors will report any problems discovered during inspection to his immediate supervisor. The Supervisor in charge of the container storage area shall be responsible for directing necessary remedial action.

Checklist blocks are to be marked with OK or Not OK depending on which is appropriate.

1. If any situation required a Not OK, an explanation will include:

    a. Description of problem.
    b. Is there danger of imminent hazard.
    c. Remedial action recommended, ie. transfer of leaking drums after 4 tests have been made to verify its contents.

2. Any remedial action records will include:

    a. Description of action taken, ie. transfer of leaking drums.

MONITORING EQUIPMENT INSPECTION LOG SHEET

Inspector's name/title _____/_____

Date of inspection _____ (month/day/year)

Time of inspection _____ (military time)

Item	Types of problems	Status (√)		Observations	Date and nature of repairs/remedial action
		Acceptable	Unacceptable		
Liquid level transmitters (tanks)	Transmitter signal, electrical circuitry, power				
Conservation vents (tanks)	Spring adjustment or sticking				
Leachate detection, collection, and removal system (waste pile)	Broken pipe or connection, lack of gravel in pipes, clogged holes in pipe, angle of drainage, ground water collected, sump pump failure				
Ground water table control system (waste pile)	Broken pipe or connection, lack of gravel in pipe, clogged holes in pipe, angle of drainage				
Runoff collection and removal system (waste pile)	Broken pipe or connection, lack of gravel in pipe, clogged holes in pipe, angle of drainage, sump pump failure				
Ground water table water meter (located in sump)	Clogging, malfunction of digital display, rotor sticking, wearing of gears				

Monitoring equipment inspection log sheet.

(continued)

Item	Types of problems	Status (√)		Observations	Date and nature of repairs/remedial action
		Acceptable	Unacceptable		
Chest-mounted gas mask cannisters	Cannisters become exhausted				
Self-contained breathing apparatus (SCBA)	Air quantity in reserve, air delivery system, moisture in tank (cold weather)				
Portable sump pump	Power, clogging				
Fire blankets	Dispensing				
Fire extinguishers	Needs recharging				
Fire alarm system	Power failure				
Telephone system	Power failure				
Public address system	Power failure, speakers				
Generators	Fuel supply, spark plugs, oil				
Emergency lighting system	Battery failure, lights				
First aid equipment and supplies	Items out of stock or inoperative				
Steam cleaner	Water supply, fuel supply				
Protective clothing (impermeable full-body coveralls, gloves, and foot coverings)	Holes, normal wear and tear				
Decontamination facility (showers, dirty room, clean room)	Water pressure, leaking, drainage, upkeep				

b. When this action is taken.
c. Who performed the remedial action.
d. Who performed the tests to confirm the contents prior to transferring and the results recorded.

265.176 Special Requirements for Ignitable or Reactive Wastes

For fire protection, to the extent possible, non-combustible and ignitable liquid containers will be stored alternately, which will provide a buffer zone between containers holding ignitable containers. Documentation of waste analysis or trial tests (total of at least 4) will be made in order to assure compliance with paragraph 265.17. All storage areas will prohibit the following by use of "No Smoking" signs.

> Open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat.

265.177 Special Requirements for Incompatible Wastes

The mixing or commingling of incompatible wastes will be done so that the following actions are controlled:

(a) Heat, pressure, fire, explosion or violent reactions.
(b) Toxic mists, fumes, dusts or gases which threaten human health.
(c) Uncontrollable flammable fumes or gases subject to fire or explosion.
(d) The structural integrity of the containers or tanks.
(e) All events which might threaten human health or the environment.

265.173 Containers Supplement

ECCD will be receiving 55 gallon drum containers containing ink and paint wastes, phenolic resin wastes and soiled solvents. The contrainers are types specificed by the U.S. Department of Transportation, such as 17C, 17E, 17H steel drums. Fiber drums are non-reusable and may or may not be accepted. See page I-1.

ECCD will control the type of container and will reject non-conformance or transfer waste to a suitable container. (U.S. D.O.T.. regulations for containers 11/1/80) (EPA - 600/2-80-076)

Thin walled steel drums will be specified for various types of lining, such as organic epoxy phenolic, or chlorinated polyethylene meeting ASTM physicla property requirements. (ASTM D-757)

Containerized Waste Management

Once accepted for storage and treatment/recycle, each waste container will have a label affixed to it for identification and tracking purposes.

The label will contain the following information:

- Generator's name
- Date received
- EPA Waste I.D. Number
- RGN Group Number
- Cell Assignment Number
- DOT Emergency Response Guidebook Protocol Number
- ECCD Inventory Control Number
- Waste Acceptance Approval Signature Block
- Waste Name or Description as Supplied by Generator

All of this information will also be entered in a master log book. Once the waste is processed out of the facility, the date and disposition of the waste will also be entered into this master log book. It is the responsibility of the facility operations manager and his superintendent to assure that each drum receives a properly completed label prior to it being entered into storage in the facility. As part of his daily reporting, he will note whether the quantities on the manifests received and completed that day coincide with the quantities entered into the master log book and the number of drums placed into storage.

SUBPART J

TANKS

265.190 Applicability

At initial startup of this facility, Tanks will not be used for storage or treatment processing. However, it is anticipated that within an eighteen (18) month period, Subpart J will be amended to permit Tank usage.

265.191 Design of Tanks

At the time an amendment to this Subpart is desired, designs will be presented for approval to the Regional Administrator.

265.192 General Operating Requirements

Wastes and other materials will be placed only in tanks whose material of construction is compatible with the wastes, or is lined for protection from accelerated corrosion, erosion, or abrasion and the liner is compatible with the wastes. Liners shall be free of leaks, cracks, holes or other deterioration. Alternate methods of tank protection are cathodic protection or corrosion inhibitors.

Appropriate controls and practices will be used to prevent over filling, namely,

1. Over filling controls such as waste feed cutoff system.
2. By-pass system to a standby tank.
3. For uncovered tanks, maintenance of sufficient free board to prevent overtopping by wave, wind action or by precipitation.

265.193 Waste Analysis and Trial Tests

Each received container or liquid via Tank Trucks will have a manifest detailing the chemical and physical analysis of a representative sample of the waste. The analysis will contain information needed for proper treating, storage or disposal. Should such information not be made available ECCD may reject such container or have analysis performed in order to comply with EPA and/or DER requirements.

The following procedures will be followed:

1. Obtain a representative pint sample from the container of hazardous waste using the numerical identifying system.
2. Label sample and take it to the laboratory for analysis and percentage breakdown of components. Four such tests will be made.

3. After sampling, the container will be checked for bung gaskets, and that the bungs are tight - containers will set for 24 hours before stacking. It will be checked for leaks.
4. Containers will be stored in a safe manner according to the category issued by the laboratory.
5. Aisle ways and exits will be kept clear throughout the storage area.
6. Forklifts will observe all applicable general safety rules.

265.194 Inspection

1. Once each operating day, overfill control equipment (waste feed cutoff system and by-pass systems) will be inspected.
2. Pressure and temperature gauges shall be checked daily.
3. To ensure compliance with part 265.192 (b)(2) check the level of waste each operating day.
4. Part of each working day, the area immediately surrounding tanks will be checked for leakage.
5. Tanks will be located inside this facilities building, and an inspection checklist has been developed.
6. Dike area surrounding tanks will have a thick layer of vermiculite for absorption of leaks and spills. See contingency plan for Chemical Spill Procedures.

Tank inspection will include inspection of:

1. All seams.
2. Supports.
3. Pumps.
4. Tank inlets and outlets.
5. Tank vents.
6. Level indicator.

In controlling overfill, the operation is manual, with a person reading the level indicator and then shutting off a valve. The attendant is to be present at all times during the filling operation. When unloading from a truck, both the tank truck and facility operator will be present to monitor the operation.

Problems in this system can be alleviated by reversing the vacuum on the truck or releasing the air pressure in the truck. The actual inspection of the level indicators is performed by periodic maintenance.

All tanks will be periodically inspected at intervals determined by establishing the rate of corrosion or erosion observed. Probably once a year but may be done more fre-

quent. Inspection will be both visual and instrumental. (Ultrasonic transducer, etc.)

265.197 Closure

At closure all hazardous waste and hazardous waste residue will be removed from tanks, treated and prepared for disposal. Discharge control equipment and discharge confinement structures will be cleaned and decontaminated. All areas of the building will be checked and decontaminated as needed. Since all storage and treatment processes will be conducted within this fully enclosed building, no post-closure surveillance is deemed necessary.

When the closure is completed, all facility equipment and structures will be properly disposed of, or decontaminated by removing all hazardous wastes and residues.

The operator will then submit to EPA and/or DER certification both by the operator and an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

Probably not more than 5,000 gallons of liquid waste would be in inventory tank storage at any given time during the life of the facility.

265.198 Special Requirements for Ignitable or Reactive Wastes

Ignitable or reactive waste will be treated, rendered or mixed before or immediately after placement in the tank so that the resulting waste, mixture or dissolution of material no longer meets the definition of ignitable or reactive waste.

Or,

The waste will be stored or treated in such manner that it is protected from any material or conditions which might cause the waste to ignite or react.

Or,

The tank is used solely for emergencies and said covered tanks will comply with the National Fire Protection Associations buffer zone requirements for tanks. (Table 2-1 through 2-6 Flammable and Combustible Code - 1977)

265.199 Special Requirements for Incompatible Wastes

The following will be so conducted that when storing or treating Incompatible Wastes the following will be prevented:

1. Extreme heat or pressure, fire, explosion or violent reaction.
2. Uncontrolled toxic mists, fumes, dust, or gases that threaten human health.

3. Uncontrolled flammable fumes or gases in quantities which would pose a risk of fire or explosion.
4. Damage the structural integrity of the device or facility containing the waste.
5. Other actions which might threaten human health or environment.

Soiled solvent will be pumped into a hopper bottomed process tank (proposed) through a top inlet pipe so that material enters the tank through submerged filling.

A large outlet at the bottom of the hopper of the process tank will provide for draining off the heavy sediment and water.

After sediment removal, the top opening may be opened to channel processed soiled solvent to a distillation unit. For heavy hydrocarbons, the processed soiled solvent is run through to the distillation unit until the sludge and water layer is reached. At this point the outlet is closed and the bottom outlet is opened to drain the tank.

Processing in the hopper bottomed tank will normally require 48 hours resulting in a tank turnover frequency of three (3) working days. However, due to the nature of the product, management decision, or equipment failure, this period may be longer.

At the ECCD facility, material will be generated in the form of still bottoms and process tank bottoms. Uses for these bottoms will be sought from an environmental and economic standpoint.

All still and process tank bottoms will be thoroughly tested and manifested before leaving the premise.

Hazardous waste can be transported from the facility in either bulk or drums. Since ECCD will be the transporter and will have full control of this procedure. All material will be shipped in compliance with EPA, DER and DOT regulations (container specifications, labeling, placarding, shipping papers, etc.)

ECCD will transport this hazardous waste to one of two places. A federal or state approved landfill capable of accepting hazardous waste, or a federal or state approved destruction facility (burning, etc.).

CONTAINER STORAGE AREA INSPECTION LOG SHEET

Inspector's name/title _____ / _____

Date of inspection _____ (month/day/year)

Time of inspection _____ (military time)

Item	Types of problems	Status (√)		Observations	Date and nature of repairs/remedial action
		Acceptable	Unacceptable		
Container placement and stacking	Aisle space, height of stacks				
Sealing of containers	Open lids				
Labeling of containers	Improper identification, date missing				
Containers	Corrosion, leakage, structural defects				
Segregation of incompatible wastes	Storage of incompatible wastes in same area				
Pallets	Damaged (e.g., broken wood, warping, nails missing)				
Fence, gate and lock	Corrosion, damage to chain link fence, sticking or corroding lock				
Base or foundation	Cracks, spalling, uneven settlement erosion, wet spots				
Dikes	Cracks, deterioration				
Sump area	Cracks, spalling, uneven settlement erosion, wet spots				
Sump pumps (automatic)	Setting adjustment, power, clogging				

39. Container storage area inspection log sheet.

(continued)

Item	Types of problems	Status (√)		Observations	Date and nature of repairs/remedial action
		Acceptable	Unacceptable		
Debris and refuse	Clog sump pump, aesthetics, possible reaction with leaks				
Ramps	Cracks, spalling, uneven settlement, erosion				
Warnings signs	Damaged				

SUBPART K

SURFACE IMPOUNDMENTS

265.220 Applicability

No surface impoundments are to be a part of this application at this time. However, the application may be amended at some future time.

SUBPART L

WASTE PILE

265.250 Applicability

No waste piles are scheduled at present, therefore, they are not part of this application at this time. However, an amendment may be submitted at some future date.

SUBPART M

LAND TREATMENT

265.270 Applicability

Land treatment is not being considered at this time, therefore, it is reserved for future amendment of this application.

SUBPPART N

LANDFILL

265.300 Applicability

A future amendment to this subpart of the application is a distinct possibility.

SUBPART O

INCINERATOR

265.340 Applicability

We do not see an amendment under this subject for some time.

SUBPART P

THERMAL TREATMENT

265.370 Applicability

An amendment to this subpart is possible in the planning schedule.

SUBPART Q

CHEMICAL, PHYSICAL, AND BIOLOGICAL TREATMENT

265.400 Applicability

The regulations in this Subpart apply to owners and operators of facilities which treat hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments, and land treatment facilities, except as 265.1 provides otherwise. (Chemical, physical, and biological treatment of hazardous waste in tanks, surface impoundments, and land treatment facilities must be conducted in accordance with Subparts J, K, and M respectively.) For this project neither tanks, surface impoundments or land treatment facilities will be used initially in the start-up operations.

265.401 General Operating Requirements

A. Chemical, physical or biological treatment of hazardous wastes will comply with 265.17(b).

B. Hazardous wastes or treatment reagents will not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode, or otherwise fail before the end of its intended life.

C. Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment will be equipped with a means to stop this inflow (e.g., a waste feed cut-off system or by-pass system to a standby containment device).

(Comment: These systems are intended to be used in the event of a malfunction in the treatment process or equipment. The basic treatment processing is the use of lime, soda ash, vermiculite or fly ash for neutralizing and solidification of container wastes.)

265.402 Waste Analysis and Trial Tests

In addition to the waste analysis required by 265.13, whenever:

A. A hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment, or

B. A substantially different process than any previously used at the facility is to be used to chemically treat

hazardous waste; the owner or operator must, before treating the different waste or using the different process or equipment:

1. Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests) totalling at least 4 tests; or
2. Obtain written, documented information on similar treatment of similar operating conditions; to show that this proposed treatment will meet all applicable requirements of 265.401 (a) and (b).

(Comment: As required by 265.13, the waste analysis plan must include analyses needed to comply with 265.405 and 265.406. As required by 265.73, the owner or operator must place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.)

265.403 Inspections

A. The owner or operator of a treatment facility must inspect, where present:

1. Discharge control and safety equipment (e.g., waste feed cut-off systems, drainage systems and pressure relief systems) at least once each operating day, to ensure that it is in good working order.

2. Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the treatment process or equipment is being operated according ot its design.

3. The construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams.

4. The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

(Comment: As required by 265.15 (c), the owner or operator will remedy any deterioration or malfunction he finds.)

265.404 Closure

At closure, all hazardous waste and hazardous waste residues

must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures.
(Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with 261.3 (c) or (d) of this Chapter, that any solid waste removed from his treatment process or equipment is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements [of Parts 262, 263, and 265 of this Chapter].)

265.405 Special Requirements for Ignitable or Reactive Wastes

A. Ignitable or reactive waste must not be placed in a treatment process or equipment unless:

1. The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that:

a. the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste, and
b. 265.17 (b) is complied with; or

2. The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react as stated under paragraph 265.176 of this report.

265.406 Special Requirements for Incompatible Wastes

A. Incompatible wastes, or incompatible wastes and materials, (see Appendix V for examples) will not be placed in the same treatment process or equipment, unless 265.17 (b) and 265.177 of this report are complied with.

B. Hazardous waste will not be placed in unwashed treatment equipment which previously held an incompatible waste or material, unless 265.17 (b) and 265.177 of this report are complied with.

SUBPART R

UNDERGROUND INJECTION

265.430 Applicability

An amendment to this subpart is possible within eighteen (18) months.

Hazardous Wastes to be Stored in
CELL #1

Hazardous Waste No.	Hazardous Constituent Name(s)
D001	ignitables
D005	barium
K014	acetonitrile, acrylamide
K023	phthalic anhydride, maleic anhydride
K024	phthalic anhydride; 1,4-naphthoquinone
K025	meta-dinitrobenzene; 2,4-dinitrotoluene
K026	paraldehyde, pyridines, 2-picoline
K031	arsenic
K035	cresote,benzo(a)pyrene, chrysene, naphthalene, flouranthene, benzo(a)anthracene. dibenzo(a)anthracene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, acenaphthalene
K036	toluene, phosphorodithioic and phosphorothioic acid esters
K048	chromium, lead
K049	chromium, lead
K050	chromium
K051	chromium, lead
K052	lead
K062	chromium, lead
K069	chromium, lead, cadmium
K084	arsenic
K086	lead, chromium
K093	phthalic anhydride, maleic anhydride
K094	phthalic anhydride
K100	chromium, lead, cadmium
K101	arsenic
K102	arsenic
K104	aniline, benzene, diphenylamine, nitrobenzene, phenylenediamine
K106	mercury
K071	mercury
K037	toluene, phosphordithioic and phosphorothioic acid esters
P011	arsenic (V) oxide
P012	arsenic (III) oxide
P110	tetraethyl lead
P115	sulfuric acid, thallium (I) salt
P120	vanadium (V) oxide
U002	acetone
U019	benzene
U032	calcium chromate
U112	acetic acid, ethyl ester
U144	acetic acid, lead salt

Hazardous Wastes to be Stored in
CELL #1

Page Two

Hazardous Waste No.	Hazardous Consitutent Name(s)
U145	lead phosphate
U151	mercury
U159	methyl ethyl ketone
U161	4-methyl-2-pentanone
U213	tetrahydrofuran
U214	thallium (I) acetate
U215	thallium (I) carbonate
U216	thallium (I) chloride
U217	thallium (I) nitrate
U220	toluene
U238	carbamic acid, ethyl ester

Hazardous Wastes to be Stored in
CELLS #2, 10, 12, 13

Hazardous Waste No.	Hazardous Constituent Name(s)
D004	arsenic
D005	barium
D006	cadmium
D007	chromium
D008	lead
D009	mercury
D010	selenium
D011	silver
F006	cadmium, chromium, nickel, cyanide (complexed)
F007	cyanide (salts)
F008	cyanide (salts)
F009	cyanide (salts)
F010	cyanide (salts)
F011	cyanide (salts)
F012	cyanide (complexed)
F019	chromium, cyanide (complexed)
K002	chromium, lead
K003	chromium, lead
K004	chromium
K005	chromium, lead
K006	chromium
K007	cyanide (complexed), chromium
K008	chromium
K038	phorate, formaldehyde, phosphoro-dithioic and phosphorothioic acid esters
K039	phosphorodithioic and phosphoro-thioic acid esters
K040	** same as K038 **
K086	lead, chromium
K026	paraldehyde, pyridines, 2-picoline
K031	arsenic
K049	chromium, lead
K050	chromium
K048	chromium, lead
K051	chromium, lead
K052	lead
K060	cyanide, naphthalene, phenolic compounds, arsenic
K069	chromium, lead, cadmium
K084	arsenic
K100	chromium, lead, cadmium
K102	arsenic
K106	mercury
K071	mercury

Hazardous Wastes to be Stored in
CELLS #2, 10, 12, 13

Hazardous Waste No.	Hazardous Constituent Name(s)
P011	arsenic (V) oxide
P012	arsenic (III) oxide
P013	barium cyanide
P021	calcium cyanide
P030	cyanides (soluble cyanide salts) not elsewhere specified
P029	copper cyanides
P055	ferric cyanide
P074	nickel (II) cyanide
P089	parathion
P098	potassium cyanide
P099	potassium silver cyanide
P104	silver cyanide
P106	sodium cyanide
P110	tetraethyl lead
P115	sulfuric acid, thallium (I) salt
P120	vanadium pentoxide
P121	zinc cyanide
P094	phorate
U001	acetaldehyde
U013	asbestos
U032	calcium chromate
U051	cresote
U052	cresols
U122	formaldehyde
U144	lead acetate
U151	mercury
U182	paraldehyde
U214	thallium (I) acetate
U188	phenol
U215	thallium (I) carbonate
U216	thallium (I) chloride
U217	thallium (I) nitrate
U145	lead phosphate

Hazardous Wastes to be Stored in
CELLS #3, 6, 14

Hazardous Waste No.	Hazardous Constituent Name(s)
D012	endrin
D013	lindane
D014	methoxychlor
D015	toxaphene
F001	tetrachloroethylene; methylene chloride; trichloroethylene; 1,1,1-trichloroethane; chlorinated fluorocarbons; carbon tetrachloride
F002	tetrachloroethylene; methylene chloride; trichloroethylene; 1,1,1-trichloroethane; chlorobenzene; 1,1,2-trichloro-1,2,2-trifluoroethane; ortho-dichlorobenzene; trichlorofluoromethane
K015	benzyl chloride, chlorobenzene, toluene
K016	hexachlorobenzene, hexachlorobutadiene, carbon tetrachloride, hexachloroethane, perchloroethylene
K018	1,2-dichloroethane, trichloroethylene, hexachlorobutadiene, hexachlorobenzene
K019	ethylene dichloride; 1,1,1-trichloroethane; 1,1,2-trichloroethane; tetrachloroethane; trichloroethylene; tetrachloroethylene; carbon tetrachloride; chloroform; vinyl chloride; vinylidene chloride
K020	** same as K019 **
K028	1,1,1-trichloroethane, vinyl chloride
K029	1,2-dichloroethane; 1,1,1-trichloroethane; vinyl chloride; vinylidene chloride, chloroform
K030	hexachlorobenzene; hexachlorobutadiene; hexachloroethane; 1,1,2,2-tetrachloroethane; 1,1,1,2-tetrachloroethane; ethylene dichloride chloroethane, ethylene dichloride
K032	hexachlorocyclopentadiene
K034	hexachlorocyclopentadiene
K042	hexachlorobenzene, ortho-dichlorobenzene
K073	chloroform, carbon tetrachloride, hexachloroethane, trichloroethane, tetrachloroethylene, dichloroethylene, 1,1,2,2-tetrachloroethane
K085	benzene, dichlorobenzenes, trichlorobenzenes, tetrachlorobenzenes, pentachlorobenzene, hexachlorobenzene, benzyl chloride

Hazardous Wastes to be Stored in
CELLS #3, 6, 14

Page Two

Hazardous Waste No.	Hazardous Constituent Name(s)
K017	epichlorohydrin, chloroethers, trichloropropane, dichloropropanols
K021	antimony, carbon tetrachloride, chloroform
K033	hexachlorocyclopentadiene
K041	toxaphene
K095	** same as K019 **
K096	1,2-dichloroethane; 1,1,1-trichloroethane; 1,1,2-trichloroethane
K097	chlordane, heptachlor
K098	toxaphehe
K083	aniline, diphenylamine, nitrobenzene, phenylenediamine
P051	endrin
P059	heptachlor
U210	tetrachloroethane
U044	chloroform
U045	chloromethane
U075	dichlorodifluoromethane
U080	dichloromethane
U226	1,1,1-trichloroethane
U019	benzene
U036	chlordane
U056	cyclohexane
U061	DDT
U065	dibromochloromethane
U067	1,2-dibromoethane
U068	dibromomethane
U070	1,2-dichlorobenzene
U071	1,3-dichlorobenzene
U072	1,4-dichlorobenzene
U076	1,1-dichloroethane
U077	1,2-dichloroethane
U121	fluorotrichloromethane
U127	hexachlorobenzene
U165	nephthalene
U208	1,1,1,2-tetrachloroethane
U209	1,1,2,2-tetrachloroethane
U211	tetrahydrofuran
U224	toxaphene
U225	tribromomethane
U227	1,1,2-trichloroethane
U228	trichloroethene
U229	trichlorofluoromethane
U043	chloroethene
U031	n-butyl alcohol
U140	isobutyl alcohol
U154	methanol

Hazardous Wastes to be Stored in
CELLS #4, 11

Hazardous Waste No.	Hazardous Constituent Name(s)
D002	corrosives
P010	arsenic acid
P063	hydrogen cyanide
K062	chromium, lead
U054	cresylic acid
U123	formic acid
U134	hydrofluoric acid
U204	selenious acid

Hazardous Wastes to be Stored in
CELL #5

Hazardous Waste No.	Hazardous Consitutent Name(s)
D002	corrosives
D004	arsenic
D005	barium
D006	cadmium
D007	chromium
D008	lead
D009	mercury
D011	silver
K061	chromium, lead, cadmium
K062	chromium, lead
K021	antimony, carbon tetrachloride, chloroform
K031	arsenic
K048	chromium, lead
K049	chromium, lead
K050	chromium
K051	chromium, lead
K052	lead
K069	chromium, lead, cadmium
K084	arsenic
K100	chromium, lead, cadmium
K101	arsenic
K102	arsenic
K106	mercury
P011	arsenic (V) oxide
P012	arsenic (III) oxide
P110	tetraethyl lead
P115	thallium (I) sulfate
P120	vanadium pentoxide
U013	asbestos
U032	calcium chromate
U144	lead acetate
U145	lead phosphate
U151	mercury
U214	thallium (I) acetate
U215	thallium (I) carbonate
U216	thallium (I) chloride
U217	thallium (I) nitrate

Hazardous Wastes to be Stored in
CELL #7

Hazardous Waste No.	Hazardous Constituent Name(s)
D002	corrosives

Hazardous Wastes to be Stored in
CELL #8

Hazardous Waste No.	Hazardous Constituent Name(s)
K027	toluene diisocyanate, toluene-2,4-diamine

Hazardous Wastes to be Stored in
CELL #9

Hazardous Waste No.	Hazardous Constituent Name(s)
D015	toxaphene
D016	2,4-D
D017	2,4,5-TP (Silvex)
D012	endrin
D013	lindane
D014	methoxychlor
D001	ignitables
K001	pentachlorophenol; phenol; 2-chlorophenol; p-chloro-m-cresol; 2,4-dimethylphenyl; 2,4-dinitrophenol; trichlorophenols; tetrachlorophenols; cresote; chrysene; naphthalene; fluoranthene; benzo(b)-fluoranthene; benzo(a)pyrene; indeno-(1,2,3-cd)pyrene; benz(a)anthracene; dibenz(a)anthracene,acenaphthalene
K022	phenol, tars
K009	chloroform, formaldehyde; methylene chloride; methyl chloride; paraldehyde; formic acid
K017	epichlorohydrin, chloroethers, trichloro-propane, dichloropropanols
K033	hexachlorocyclopentadiene
K035	** same as K001 **
K041	toxaphene
K087	phenol, naphthalene
K095	ethylene dichloride; 1,1,1-trichloro-ethane; 1,1,2-trichloroethane; tetra-chloroethanes; trichloroethylene; tetra-chloroethylene; carbon tetrachloride; chloroform; vinyl chloride; vinylidene chloride
K096	1,2-dichloroethane; 1,1,1-trichloro-ethane; 1,1,2-trichloroethane
K097	chlordane, heptachlor
K098	toxaphene
K099	2,4-dichlorophenol; 2,4,6-trichloro-phenol
K105	benzene; monochlorobenzene; dichloro-benzenes; 2,4,6-trichlorophenol
K043	2,4-dichlorophenol; 2,4,6-trichloro-phenol
K010	chloroform, formaldehyde, methylene chloride, methyl chloride, paraldehyde, formic acid, chloroacetaldehyde
P051	endrin
P059	heptachlor
P090	pentachlorophenol

Hazardous Wastes to be Stored in
CELL #9

Page Two

Hazardous Waste No.	Hazardous Constituent Name(s)
U036	chlordane
U037	chlorobenzene
U019	benzene
U048	2-chlorophenol
U051	cresote
U052	cresols
U054	cresylic acid
U056	cyclohexane
U061	DDT
U065	dibromochloromethane
U067	1,2-dibromoethane
U068	dibromomethane
U070	1,2-dichlorobenzene
U071	1,3-dichlorobenzene
U072	1,4-dichlorobenzene
U076	1,1-dichloroethane
U077	1,2-dichloroethane
U081	2,4-dichlorophenol
U082	2,6-dichlorophenol
U121	fluorotrichloromethane
U123	formic acid
U127	hexachlorobenzene
U165	naphthalene
U188	phenol
U233	2,4,5-trichlorophenoxypropionic acid, alp
U208	1,1,1,2-tetrachloroethane
U209	1,1,2,2-tetrachloroethane
U211	tetrahydrofuran
U224	toxaphene
U225	tribromomethane
U227	1,1,2-trichloroethane
U228	trichloroethene
U229	trichlorofluoromethane
U230	2,4,5-trichlorophenol
U231	2,4,6-trichlorophenol
U043	chloroethene
U239	xylene

Hazardous Wastes to be Stored in
CELL #15

Hazardous Waste No.	Hazardous Constituent Name(s)
K011	acrylonitrile, acetonitrile, hydrocyanic acid
K013	hydrocyanic acid, acrylonitrile, acetonitrile

MODIFICATIONS TO CELL ARRANGEMENTS

EAST COAST CHEMICAL DISPOSAL, INC.
MARCUS HOOK, PA

Cell #1

This cell is designated to contain materials classed in the following Reactivity Group Numbers (RGN's)

- 6 - amides
- 7 - amines, aliphatic and aromatic
- 13 - esters
- 16 - hydrocarbons, aromatic
- 19 - ketones
- 24 - metals and metal compounds, toxic
- 26 - nitriles
- 27 - nitro compounds, organic
- 31 - phenols and cresols
- 32 - organophosphates, phosphothioates, phosphodithioates
- 101 - combustible and flammable materials, misc.

Hazardous Waste No. K026, stripping still tails from the production of methyl ethyl pyridines, is one of the wastes which could be placed in this cell. However, a potential incompatibility exists if this waste contains paraldehyde (RGN 5). Thus, this waste will be analyzed upon receipt to determine if paraldehyde is present. Analysis will be by methods 8015 and 8090-SW 846 (see Table 2 - Parameters and Test Methods). If paraldehyde is present, waste will be stored in Cells #2, 10, 12 and/or 13.

No wastes from RGN 3 will be stored in Cell #1. Waste No. F004 was inadvertently included in this cell on a previous submittal. This waste, if received, will be stored in Cells #4, 9, and/or 11.

Cells #3, 6, 14

This cell is designated to contain materials classed in RGN

- 4 - alcohols and glycols
- 16 - hydrocarbons, aromatic
- 17 - halogenated organics
- 101 - combustible and flammable materials, misc.
- 103 - polymerizable compounds

However, hazardous waste K017, heavy ends (still bottoms) from the purification column in the production of epichlorohydrin, exhibits an internal incompatibility. The compounds which are the basis for listing this waste contain epichlorohydrin (RGN 17 and 34) and dichloropropanols (RGN 4 and 17). RGN 4 and 34 are incompatible producing heat generation and violent polymerization as consequences of mixing. Because this is an internal incompatibility in this waste stream, we maintain that any reaction will have occurred prior to the waste being received at this facility. Thus, we do not feel that it is necessary to segregate this waste (K017) from the other materials in this cell.

Hazardous waste K021, aqueous spent antimony catalyst waste from fluoromethanes production, can contain antimony (RGN 23 and 24), carbon tetrachloride (RGN 17), and/or chloroform (RGN 17). If antimony is detected in the actual waste during the pre-acceptance analysis, this waste will be stored in Cell #5.

Hazardous waste K035, wastewater treatment sludges generated in the production of creosote, will be removed from Cells # 3, 6, and 14. It will be stored in Cell #9, only.

Cell #5

This cell is designated to contain materials classed in RGN

10 - caustics
23 - metals, other elemental and alloys
24 - metals and metal compounds, toxic

As noted for Cells #3, 6, and 14, if K021 exhibits antimony, then it will be stored in this cell. If it exhibits either of the chlorinated organics given as the basis for listing (carbon tetrachloride or chloroform) it will be stored in Cells #3, 16 and/or 14.

ND wastes from RGN 3 will be stored in Cell #5. Waste No. F004 was inadvertently included in this cell on a previous submittal. This waste, if received, will be stored in Cells #4, 9, and/or 11.

Fig. 1 HAZARDOUS WASTE COMPATIBILITY CHART

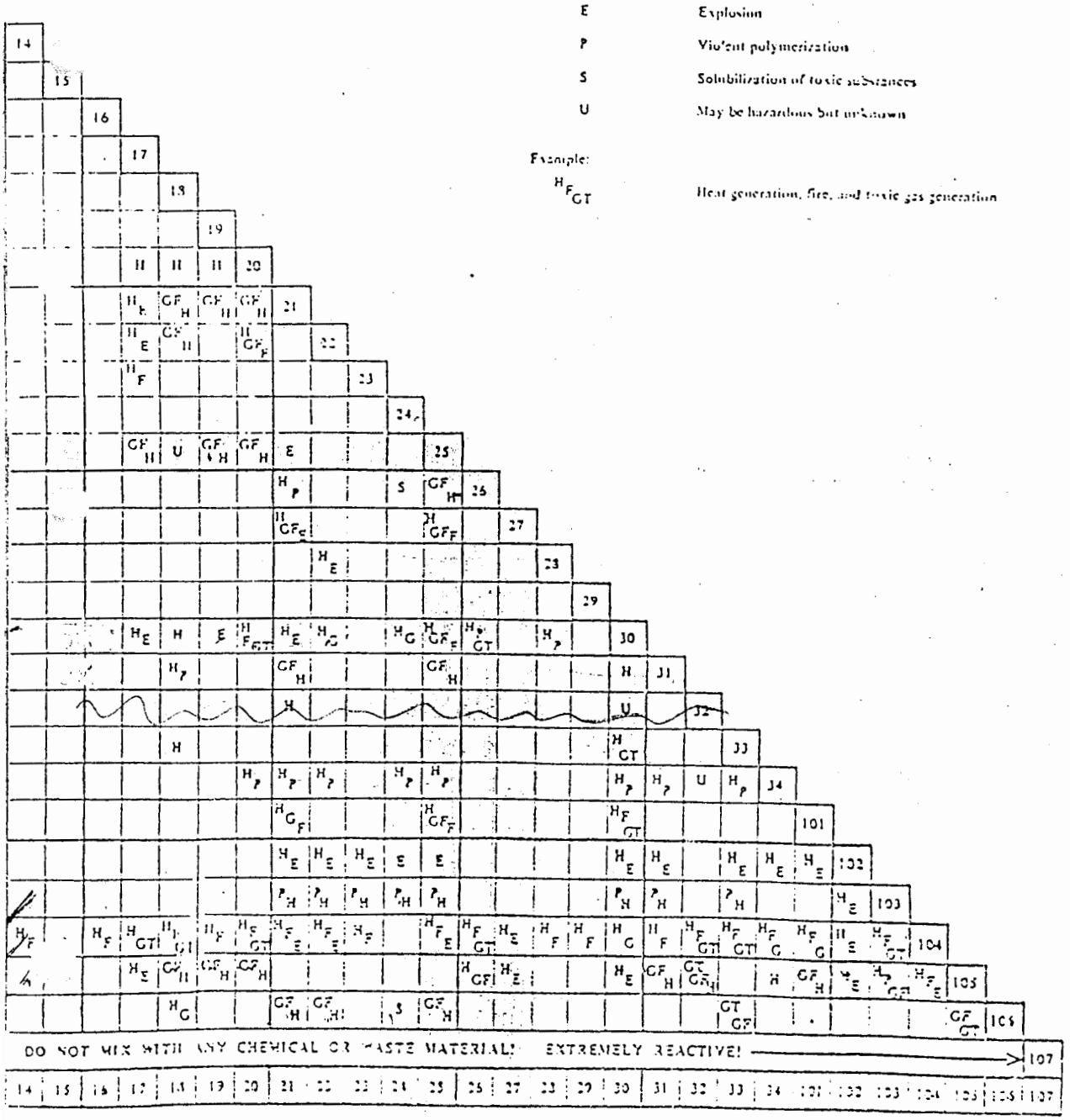
REACTIVITY GROUP NO.	REACTIVITY GROUP NAME	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Acids, Mineral, Non-oxidizing													
2	Acids, Mineral, Oxidizing													
3	Acids, Organic		G H											
4	Alcohols and Glycols	H	H_F	H_P										
5	Aldehydes	H_P	H_F	H_P										
6	Amides	H	H_{GT}											
7	Amines, Aliphatic and Aromatic	H	H_{GT}	H		H								
8	Azo Compounds, Diazo Compounds, and Hydrazines	H_G	H_{GT}	H_G	H_G	H								
9	Carbamates	H_G	H_{GT}						G_H					
10	Caustics	H	H	H		H				H_G				
11	Cyanides	GT GF	GT GF	GT GF					G					
12	Dithiocarbamates	H_{GF}	H_{GF}	H_{GT}		$_{GT}^{GF}$		U	H_G					
13	Esters	H	H_F						H_G		H			
14	Ethers	H	H_F											
15	Fluorides, Inorganic	GT	GT	GT										
16	Hydrocarbons, Aromatic		H_F											
17	Halogenated Organics	H_{GT}	H_{GT}					H_{GT}	H_G		H_{GF}	H		
18	Isocyanates	H_G	H_{GT}	H_G	H_P			H_P	H_G		H_{PG}	H_G	U	
19	Ketones	H	H_F						H_G		H	H		
20	Mercaptans and Other Organic Sulfides	GF GT	H_{GT}						H_G					
21	Metals, Alkali and Alkaline Earth, Elemental	GF H_F	GF H_F	GF H_F	GF H_F	GT H_F	GF H	GF H	GF H	GF H	GF H	GF H	GF GT H	GT H
22	Metals, Other Elemental & Alloys as Powders, Vapors, or Sponges	GF H_F	GF H_F	GF					H_{GT}	U	GF H			
23	Metals, Other Elemental & Alloys as Sheets, Rods, Drops, Massive etc	GF H_F	GF H_F						H_G					
24	Metals and Metal Compounds, Toxic	S	S	S			S	S			S			
25	Nitrides	GF H_F	H_E	H_{GF}	GF H_E	GF H			U	H_G	U	GF H	GF H	GF H
26	Nitriles	H_{GT} GF	H_{GT}	H							U			
27	Nitro Compounds, Organic		H_{GT}			H					H_E			
28	Hydrocarbons, Aliphatic, Unsaturated	H	H_F			H								
29	Hydrocarbons, Aliphatic, Saturated		H_F											
30	Peroxides and Hydroperoxides, Organic	H_G	H_E		H_F	H_G		H_{GT}	H_E	H_{GT}		H_E GT	H_F GT	
31	Phenols and Cresols	H	H_F						H_G					
32	Organophosphates, Phosphothioates, Phosphodithioates	H_{GT}	H_{GT}						U		H_E			
33	Sulfides, Inorganic	GT GF	H_F GT	GT		H			E					
34	Epoxides	H_P	H_P	H_P	H_P	U		H_P	H_P		H_P	H_P	U	
101	Combustible and Flammable Materials, Miscellaneous	H_G	H_F GT											
102	Explosives	H_E	H_E	H_E					H_E		H_E			H_E
103	Polymerizable Compounds	P_H	P_H	P_H					P_H		P_H	P_H	U	
104	Oxidizing Agents, Strong	H_{GT}	-	H_{GT}	H_F	H_F	H_E GT	H_E GT	H_E	H_E GT		H_E GT	H_F GT	H_F
105	Reducing Agents, Strong	H GF	H_F GT	H GF	H GF_E	GF H_E	GF H	H GF	H_G				H GT	H_E
106	Water and Mixtures Containing Water	H	H						G					
107	Water Reactive Substances	← EXTREMELY REACTIVE!												
		1	2	3	4	5	6	7	8	9	10	11	12	13

HAZARDOUS WASTE COMPATIBILITY CHART (Continued)

Reactivity Code	Consequences
H	Heat generation
F	Fire
G	Innocuous and non-flammable gas generation
GT	Toxic gas generation
GF	Flammable gas generation
E	Explosion
P	Violent polymerization
S	Solubilization of toxic substances
U	May be hazardous but unknown

Example:

$H_{F_{GT}}$ Heat generation, fire, and toxic gas generation



R.A.H. CONSULTING

January 15, 1985

Mr. Gilbert Horowitz
RCRA Permits Section
Code 3HW33
U.S. EPA
Sixth and Walnut Streets
Philadelphia, PA 19106

Dear Gil:

Enclosed please find the following documents which are to become part of the permit application for the East Coast Chemical Disposal Inc. TSD facility at Marcus Hook, PA:

1) a complete copy of Table 1 - Test Parameters and Rationale for Selection

2) a complete copy of Table 2 - Parameters and Test Methods

3) copies of work sheets which detail the recommended fire fighting practices for the chemicals listed as based on the 1984 Emergency Response Guidebook DOT P 5800.3.

As noted in these work sheets both dry chemical and water spray fire fighting techniques are compatible with all materials to be handled except toluene-2,4-diamine (K027). This water reactive material will be held in Cell #8 as already outlined in previous submittals.

All cells except Cell #8 and all general building areas will be equipped with dry chemical and/or water spray fire protection as appropriate. Cell #8 will be equipped with hand-held dry chemical fire extinguishers.

1190 Charter Road • Warminster, PA 18974 • (215) 672-8941

Should you have other questions regarding this system, please do not hesitate to contact me. I have recently moved to 295 West Street Road, Warminster, PA 18974, phone number (215) 675-1880.

Sincerely,

R.A.H. CONSULTING

Rex A. Hunter, CHMM
Principal Manager

RAH:sm
Enclosures

cc: Lewis Maslow, East Coast Chemical Disposal, Inc.
Greenhill W-414
1001 City Avenue
Philadelphia, PA 19151

DOT EG Guidebook
Fire Fighting Methods

I. #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
D001	Flash point	✓	✓	✓	✓	
D002	Corrosivity	✓	✓	✓	✓	
D004	Arsenic	✓	✓	✓	✓	
D005	Barium	✓	✓	✓	✓	
D006	Cadmium	✓	✓	✓	✓	
D007	Chromium	✓	✓	✓	✓	
D008	Lead	✓	✓	✓	✓	
D009	Mercury	✓	✓	✓	✓	
D010	Selenium	✓	✓	✓	✓	
D011	Silver	✓	✓	✓	✓	
D012	Endrin	✓	✓	✓	✓	
D013	Lindane	✓	✓	✓	✓	
D014	Methoxychlor	✓	✓	✓	✓	
D015	Toxaphene	✓	✓	✓	✓	
D016	2,4-D	✓	✓	✓	✓	
D017	2,4,5-TP (Silvex)	✓	✓	✓	✓	

DOT ER Guidebook
Fire Fighting Methods

ID #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
F001	tetrachloroethylene	✓	✓	✓	✓	~~fog~~
	methylene chloride	✓	✓	✓	✓	~~fog~~
	trichloroethylene	✓	✓	✓	✓	~~fog~~
	1,1,1-trichloroethane	✓	✓	✓	✓	~~fog~~
	chlorinated fluorocarbons	✓	✓	✓	✓	~~fog~~
	carbon tetrachloride	✓	✓	✓	✓	~~fog~~
F002	tetrachloroethylene	✓	✓	✓	✓	~~fog~~
	methylene chloride	✓	✓	✓	✓	~~fog~~
	trichloroethylene	✓	✓	✓	✓	~~fog~~
	1,1,1-trichloroethane	✓	✓	✓	✓	~~fog~~
	chlorobenzene	✓	✓	✓	✓	~~fog~~
	1,1,2-trichloro-1,2,2-trifluoro-ethane	✓	✓	✓	✓	~~fog~~
	ortho-dichlorobenzene	✓	✓	✓	✓	~~fog~~
	trichlorofluoromethane	✓	✓	✓	✓	~~fog~~
F006	cadmium	✓	✓	✓	✓	
	chromium	✓	✓	✓	✓	
	nickel	✓	✓	✓	✓	
	cyanide (complexed)	✓	✓	✓	✓	
F007	cyanide (salts)	✓	✓	✓	✓	
F008	cyanide (salts)	✓	✓	✓	✓	
F009	cyanide (salts)	✓	✓	✓	✓	
F010	cyanide (salts)	✓	✓	✓	✓	
F011	cyanide (salts)	✓	✓	✓	✓	
F012	cyanide (complexed)	✓	✓	✓	✓	
F019	chromium	✓	✓	✓	✓	
	cyanide (complexed)	✓	✓	✓	✓	

DOT ER Guidebook
Fire Fighting Methods

ID #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
K001	pentachlorophenol	✓	✓	✓	✓	
	phenol	✓	✓	✓	✓	
	2-chlorophenol	✓	✓	✓	✓	
	p-chloro-m-cresol	✓	✓	✓	✓	
	2,4-dimethylphenyl	✓	✓	✓	✓	
	2,4-dinitrophenol	✓	✓	✓	✓	
	trichlorophenols	✓	✓	✓	✓	
	tetrachlorophenols	✓	✓	✓	✓	
	2,4-dinitrophenol	✓	✓	✓	✓	
	Creosote	✓	✓	✓	✓	
	Chrysene	✓	✓	✓	✓	
	naphthalene	✓	✓		✓	Sand
	fluoranthene	✓	✓	✓	✓	
	benzo(b)fluoranthene	✓	✓	✓	✓	
	benzo(a) pyrene	✓	✓	✓	✓	
	indeno(1,2,3-cd) pyrene	✓	✓	✓	✓	
	benz (a) anthracene	✓	✓	✓	✓	
	dibenz(a)anthracene	✓	✓	✓	✓	
	acenaphthalene	✓	✓	✓	✓	
K002	chromium	✓	✓	✓	✓	
	lead	✓	✓	✓	✓	
K003	chromium	✓	✓	✓	✓	
	lead	✓	✓	✓	✓	
K004	chromium	✓	✓	✓	✓	
K005	chromium	✓	✓	✓	✓	
	lead	✓	✓	✓	✓	
K006	chromium	✓	✓	✓	✓	
K007	cyanide (complexed)	✓	✓	✓	✓	
	chromium	✓	✓	✓	✓	
K008	chromium	✓	✓	✓	✓	
K009	chloroform	✓	✓	✓	✓	
	formaldehyde	✓	✓	✓	✓	
	methylene chloride	✓	✓	✓	✓	
	methyl chloride		✓		✓	
	paraldehyde	✓	✓	✓		alcohol foam
	formic acid	✓	✓	✓	✓	

DOT ER Guidebook
Fire Fighting Methods

In.	Basis	Dry Chemical	water Spray	CO_2	Foam	Other
K011	acrylonitrile	✓	✓	✓	✓	
	acetonitrile	✓	✓	✓	✓	
	hydrocyanic acid	✓	✓	✓	✓	
K013	hydrocyanic acid	✓	✓	✓	✓	
	acrylonitrile	✓	✓	✓	✓	
	acetonitrile	✓	✓	✓	✓	
K014	acetonitrile	✓	✓	✓	✓	
	acrylamide	✓	✓	✓	✓	
K015	benzyl chloride	✓	✓	✓	✓	
	chlorobenzene	✓	✓	✓	✓	
	toluene	✓	✓	✓	✓	
	benzotrichloride	✓	✓	✓	✓	
K016	hexachlorobenzene	✓	✓	✓	✓	
	hexachlorobutadiene	✓	✓	✓	✓	
	carbon tetrachloride	✓	✓	✓	✓	
	hexachloroethane	✓	✓	✓	✓	
	perchloroethylene	✓	✓	✓	✓	
K017	epichlorohydrin	✓	✓	✓	✓	
	chloroethers	✓	✓	✓	✓	
	trichloropropane	✓	✓	✓	✓	
	dichloropropanols	✓	✓	✓	✓	
K018	1,2-dichloroethane	✓	✓	✓	✓	
	trichloroethylene	✓	✓	✓	✓	
	hexachlorobutadiene	✓	✓	✓	✓	
	hexachlorobenzene	✓	✓	✓	✓	
K019	ethylene dichloride	✓	✓	✓		alcohol foam
	1,1,1-trichloroethane	✓	✓	✓	✓	
	1,1,2-trichloroethane	✓	✓	✓	✓	
	tetrachloroethanes	✓	✓	✓	✓	
	trichloroethylene	✓	✓	✓	✓	
	Tetrachloroethylene	✓	✓	✓	✓	
	Carbon Tetrachloride	✓	✓	✓	✓	
	Chloroform	✓	✓	✓	✓	
	vinyl chloride	✓	✓	✓	✓	
	vinylidene chloride	✓	✓	✓		alcohol foam

DOT ER Guidebook
Fire Fighting Methods

ID #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
K020	(as K019)	✓	✓	✓	✓	alcohol foam
K021	antimony	✓	✓	✓	✓	
	carbon tetrachloride	✓	✓	✓	✓	
	chloroform	✓	✓	✓	✓	
K022	phenol	✓	✓	✓	✓	
	tars	✓	✓	✓	✓	
K023	phthalic anhydride	✓	✓	✓	✓	
	maleic anhydride	✓	✓	✓	✓	
K024	phthalic anhydride	✓	✓	✓	✓	
	1,4-naphthaquinone	✓	✓	✓	✓	
K025	meta-dinitrobenzene	✓	✓	✓	✓	
	2,4-dinitrotoluene	✓	✓	✓	✓	
K026	paraldehyde	✓	✓	✓		alcohol foam
	pyridines	✓	✓	✓		alcohol foam
	2-picoline	✓	✓	✓	✓	
K028	1,1,1-trichloroethane	✓	✓	✓	✓	
	vinyl chloride	✓	✓	✓	✓	
K029	1,2-dichloroethane	✓	✓	✓	✓	
	1,1,1-trichloroethane	✓	✓	✓	✓	
	vinyl chloride	✓	✓	✓	✓	
	vinylidene chloride	✓	✓	✓		alcohol foam
	chloroform	✓	✓	✓	✓	
K030	hexachlorobenzene	✓	✓	✓	✓	
	hexachlorobutadiene	✓	✓	✓	✓	
	hexachloroethane	✓	✓	✓	✓	
	1,1,1,2-tetrachloroethane	✓	✓	✓	✓	
	1,1,2,2-tetrachloroethane	✓	✓	✓	✓	
	ethylene dichloride	✓	✓	✓		alcohol foam
K031	arsenic	✓	✓	✓	✓	
K032	hexachlorocyclopentadiene	✓	✓	✓	✓	
K033	(as K032)	✓	✓	✓	✓	
K034	(as K032)	✓	✓	✓	✓	
K035	(as K001)	✓	✓	✓	✓	
K036	toluene	✓	✓	✓	✓	
	phosphorodithioic acid ester	✓	✓	✓	✓	
	phosphorothioic acid ester	✓	✓	✓	✓	
K037	(as K036)	✓	✓	✓	✓	

DOT ERG Guidebook
Fire Fighting Methods

ID#	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
K038	phorate	✓	✓	✓	✓	
	formaldehyde	✓	✓	✓	✓	
	phosphorodithioic acid ester	✓	✓	✓	✓	
	phosphorothioic acid ester	✓	✓	✓	✓	
K039	phosphorodithioic acid ester	✓	✓	✓	✓	
	phosphorothioic acid ester	✓	✓	✓	✓	
K040	(as K038)	✓	✓	✓	✓	
K041	toxaphene	✓	✓	✓	✓	
K042	hexachlorobenzene	✓	✓	✓	✓	
	ortho-dichlorobenzene	✓	✓	✓	✓	
K0[illegible]	chromium	✓	✓	✓	✓	
	lead	✓	✓	✓	✓	
K049	(as K048)	✓	✓	✓	✓	
K050	chromium	✓	✓	✓	✓	
K051	(as K048)	✓	✓	✓	✓	
K[illegible]2	lead	✓	✓	✓	✓	
K060	cyanide	✓	✓	✓	✓	
	naphthalene	✓	✓		✓	Sand
	phenolic compounds	✓	✓	✓	✓	
	~~asen~~ arsenic	✓	✓	✓	✓	
K062	(as K048)	✓	✓	✓	✓	
K0[illegible]	chromium	✓	✓	✓	✓	
	lead	✓	✓	✓	✓	
	cadmium	✓	✓	✓	✓	
K069	(as K061)	✓	✓	✓	✓	
K073	chloroform ← K071 mercury	✓	✓	✓	✓	
	carbon tetrachloride	✓	✓	✓	✓	
	hexachloroethane	✓	✓	✓	✓	
	trichloroethane	✓	✓	✓	✓	
	tetrachloroethylene	✓	✓	✓	✓	
	dichloroethylene	✓	✓	✓	✓	
	1,1,2,2-tetrachloroethane	✓	✓	✓	✓	
K[illegible]83	aniline	✓	✓	✓	✓	
	diphenylamine	✓	✓	✓		
	nitrobenzene	✓	✓	✓	✓	
	phenylenediamine	✓	✓	✓	✓	

DOT ER Guidebook
Fire Fighting Methods

ID#	Basis	Dry Chemical	water Spray	CO_2	Foam	Other
K084	(as K031)	✓	✓	✓	✓	
K085	benzene	✓	✓	✓	✓	
	dichlorobenzenes	✓	✓	✓	✓	
	trichlorobenzenes	✓	✓	✓	✓	
	tetrachlorobenzenes	✓	✓	✓	✓	
	pentachlorobenzene	✓	✓	✓	✓	
	hexachlorobenzene	✓	✓	✓	✓	
	benzyl chloride	✓	✓	✓	✓	
K086	(as K048)	✓	✓	✓	✓	
K087	phenol	✓	✓	✓	✓	
	naphthalene	✓	✓		✓	sand
K093	phthalic anhydride	✓	✓	✓	✓	
	maleic anhydride	✓	✓	✓	✓	
K094	phthalic anhydride	✓	✓	✓	✓	
K095	(as K019)	✓	✓	✓	✓	alcohol foam
K096	1,2-dichloroethane	✓	✓	✓	✓	
	1,1,1-trichloroethane	✓	✓	✓	✓	
	1,1,2-trichloroethane	✓	✓	✓	✓	
K097	chlordane	✓	✓	✓	✓	
	heptachlor	✓	✓	✓	✓	
K098	toxaphene	✓	✓	✓	✓	
~~K099~~ K043	2,4-dichlorophenol	✓	✓	✓	✓	
	2,4,6-trichlorophenol	✓	✓	✓	✓	
~~K000~~	2,6-dichlorophenol	✓	✓	✓	✓	
~~K043~~ K099	(as K043)	✓	✓	✓	✓	
K027	toluene diisocyanate	✓	✓	✓	✓	
	toluene-2,4-diamine	✓	— water reactive —			soda ash lime
~~K000~~ K010	(as K009 and		(see K009)			
	chloroacetaldehyde	✓	✓	✓	✓	
K100	(as K061)	✓	✓	✓	✓	
K101	(as K031)	✓	✓	✓	✓	
K102	(as K031)	✓	✓	✓	✓	
K103	(as K083)	✓	✓	✓	✓	
K104	as K083 plus benzene	✓	✓	✓	✓	
~~K105~~						

DOT ER Guidebook
Fire Fighting Methods

ID #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
K105	benzene	✓	✓	✓	✓	
	monochlorobenzene	✓	✓	✓	✓	
	dichlorobenzenes	✓	✓	✓	✓	
	2,4,6-trichlorophenol	✓	✓	✓	✓	
K106	(as K071)	✓	✓	✓	✓	

DOT ER Guidebook
Fire Fighting Methods

ID #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
P010	arsenic acid	✓	✓	✓	✓	
P011	arsenic (V) oxide	✓	✓	✓	✓	
P012	arsenic (III) oxide	✓	✓	✓	✓	
P013	barium cyanide	✓	✓	✓	✓	
P021	calcium cyanide	✓	✓	✓	✓	
P030	cyanides	✓	✓	✓	✓	
P029	copper cyanide	✓	✓	✓	✓	
P051	endrin	✓	✓	✓	✓	
P059	heptachlor	✓	✓	✓	✓	
P090	pentachlorophenol	✓	✓	✓	✓	
P[illegible]3	hydrogen cyanide	✓	✓	✓	✓	
P055	ferric cyanide	✓	✓	✓	✓	
P074	nickel cyanide	✓	✓	✓	✓	
P089	parathion	✓	✓	✓	✓	
P098	potassium cyanide	✓	✓	✓	✓	
P[illegible]9	potassium silver cyanide	✓	✓	✓	✓	
P104	silver cyanide	✓	✓	✓	✓	
P106	sodium cyanide	✓	✓	✓	✓	
P110	tetraethyl lead	✓	✓	✓	✓	
P115	thallium (I) sulfate	✓	✓	✓	✓	
P120	vanadium pentoxide	✓	✓	✓	✓	
P[illegible]	zinc cyanide	✓	✓	✓	✓	
P094	phorate					

DOT ER Guidebook
Fire Fighting Methods

ID #	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
1002	acetone	✓	✓	✓		alcohol foam
1013	asbestos	✓	✓	✓	✓	
019	benzene	✓	✓	✓	✓	
031	n-butyl alcohol	✓	✓	✓		alcohol foam
032	calcium chromate	✓	✓	✓	✓	
036	chlordane	✓	✓	✓	✓	
037	chlorobenzene	✓	✓	✓	✓	
043	chloroethene	✓	✓	✓	✓	
044	chloroform	✓	✓	✓	✓	
5	chloromethane	✓	✓	✓	✓	
048	2-chlorophenol	✓	✓	✓	✓	
051	cresote	✓	✓	✓	✓	
052	cresols	✓	✓	✓	✓	
054	cresylic acid	✓	✓	✓	✓	
56	cyclohexane	✓	✓	✓		alcohol foam
001	DDT	✓	✓	✓	✓	
065	dibromochloromethane	✓	✓	✓	✓	
067	1,2-dibromoethane	✓	✓	✓	✓	
068	dibromomethane	✓	✓	✓	✓	
070	1,2-dichlorobenzene	✓	✓	✓	✓	
	1,3-dichlorobenzene	✓	✓	✓	✓	
072	1,4-dichlorobenzene	✓	✓	✓	✓	
075	dichlorodifluoromethane	✓	✓	✓	✓	
076	1,1-dichloroethane	✓	✓	✓	✓	
077	1,2-dichloroethane	✓	✓	✓	✓	
080	dichloromethane	✓	✓	✓	✓	
081	2,4-dichlorophenol	✓	✓	✓	✓	
082	2,6 dichlorophenol	✓	✓	✓	✓	
12	ethyl acetate	✓	✓	✓		alcohol foam
21	fluorotrichloromethane	✓	✓	✓	✓	
22	formaldehyde	✓	✓	✓	✓	
23	formic acid	✓	✓	✓	✓	
27	hexachlorobenzene	✓	✓	✓	✓	
1341	hydrofluoric acid	✓	✓	✓	✓	
140	isobutyl alcohol	✓	✓	✓		alcohol foam
144	lead acetate	✓	✓	✓	✓	

DOT ER Guidebook
Fire Fighting Methods

D#	Basis	Dry Chemical	Water Spray	CO_2	Foam	Other
145	lead phosphate	✓	✓	✓	✓	
151	mercury	✓	✓	✓	✓	
154	methanol	✓	✓	✓	✓	
159	methyl ethyl ketone	✓	✓	✓		alcohol foam
161	methyl isobutyl ketone	✓	✓	✓		alcohol foam
165	naphthalene	✓	✓		✓	sand
182	paraldehyde	✓	✓	✓		alcohol foam
188	phenol	✓	✓	✓	✓	
204	Selenious acid	✓	✓	✓	✓	
208	1,1,1,2-tetrachloroethane	✓	✓	✓	✓	
209	1,1,2,2-tetrachloroethane	✓	✓	✓	✓	
210	tetrachloroethene	✓	✓	✓	✓	
211	tetrahydrofuran	✓	✓	✓		alcohol foam
214	thallium (I) acetate	✓	✓	✓	✓	
215	thallium (I) carbonate	✓	✓	✓	✓	
216	thallium (I) chloride	✓	✓	✓	✓	
217	thallium (I) nitrate	✓	✓	✓		
220	toluene	✓	✓	✓	✓	
224	toxaphene	✓	✓	✓	✓	
225	tribromomethane	✓	✓	✓	✓	
226	1,1,1-trichloroethane	✓	✓	✓	✓	
227	1,1,2-trichloroethane	✓	✓	✓	✓	
228	trichloroethene	✓	✓	✓	✓	
1229	trichlorofluoromethane	✓	✓	✓	✓	
1230	2,4,5-trichlorophenol	✓	✓	✓	✓	
1231	2,4,6-trichlorophenol	✓	✓	✓	✓	
233	2,4,5-trichlorophenoxy-propionic acid alpha	✓	✓	✓	✓	
238	urethane	✓	✓	✓		
239	xylene	✓	✓	✓	✓	